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THE JOURNAL

OF THE

American Medical Association

Annual Subscription, $5.00 | PUBLISHED WEEKLY | Single Copies, 20 Cents

VOLUME 84, No. 21 | 535 North Dearborn Street, CHICAGO, ILL. | MAY 23, 1925

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Entered as Second-Class Matter, June 25, 1885, at the Postoffice at Chicago, Ill., under Act of March 3, 1879. Acceptance for mailing at special rate of postage provided for in Section 1103, Act of October 3, 1917, authorized on June 14, 1918. If undeliverable, return postage is guaranteed

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NEXT ANNUAL SESSION, ATLANTIC CITY, MAY 25-29, 1925.

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Experience is the best teacher, yes; but sometimes the experience is costly.

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THIS clinic by Drs. Joslin, Root and White of Boston, is one of the most practical on this subject ever presented to the medical profession. It gives in detail just precisely how to handle a case of diabetic coma. It gives the treatment of the *disease* rather than of its *symptom*—acidosis. It is based on actual cases. It gives the frequency of coma, the prognosis, influence of environment, age, and weight. It tells you how to examine the patient, how to take the pulse and blood pressure; what you can find out from examination of the chest and abdomen. It gives the clinical interpretation of blood findings; it takes up the question of urinary nitrogen and metabolism. It gives diagnosis; it tells how to meet emergencies, exactly how to use insulin. In fact it is a complete monograph on the whole subject of diabetic coma—its etiology, symptomatology, diagnosis, and treatment.

This is just one of the clinics in the May Number of the MEDICAL CLINICS OF NORTH AMERICA.

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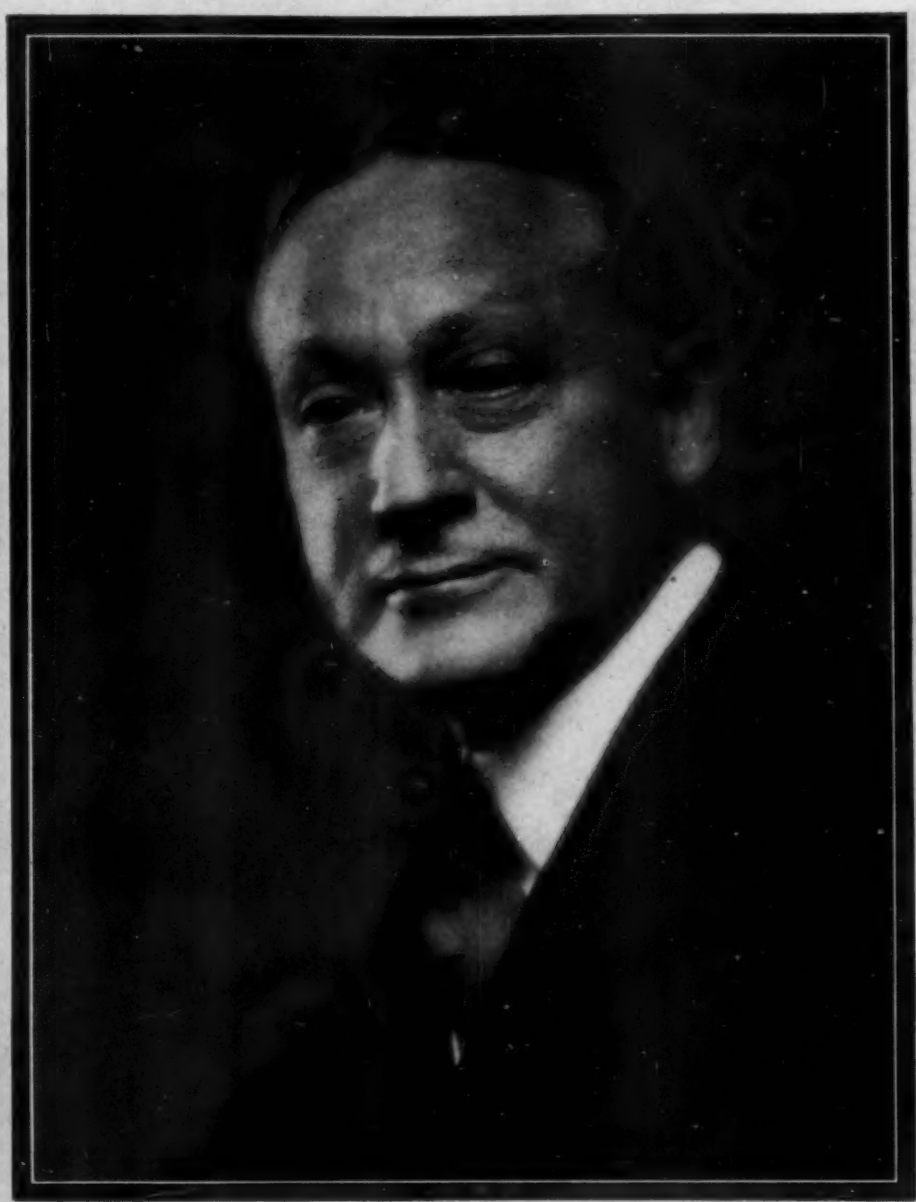
ANNALS OF MEDICAL HISTORY, Published Quarterly

Edited by Francis R. Packard, M. D., Phila. (Vol. VII, 1925) $8.00 a year. "Annals of Medical History contains most interesting material and deserves for its admirable printing, illustrations and style, widespread support from medical readers." *Brit. M. J.* A few copies of Vols. I-VI are still available.

Published by PAUL B. HOEBER, Inc. : : : 67-69 East 59th Street, New York, N. Y.



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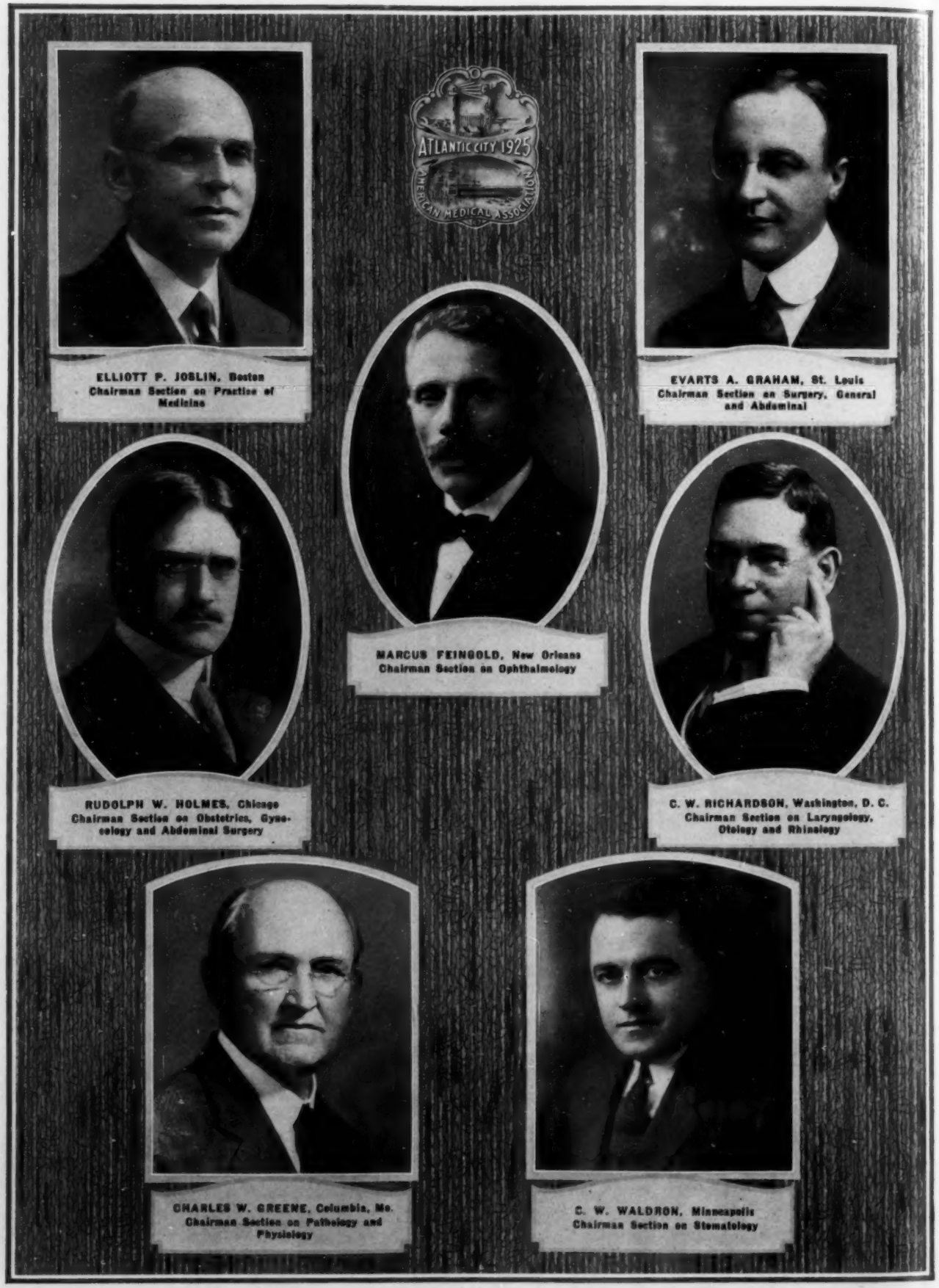
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The Journal of the American Medical Association

Published Under the Auspices of the Board of Trustees

VOL. 84, NO. 21 CHICAGO, ILLINOIS MAY 23, 1925

RHEUMATISM

THE HARRINGTON LECTURE *

W. G. MACCALLUM, M.D.

BALTIMORE

Great confusion has prevailed in the use of the term rheumatism, since it has been applied to all sorts of painful affections of the joints and even to more indefinite muscular pains. Deforming types of arthritis have been included, and such expressions as rheumatoid arthritis have been employed. But for many years it has been recognized that there is one condition in which painful swelling of the joints is variously combined with tonsillitis, chorea, fever, subcutaneous nodules and especially with profound disease of the heart, that stands apart from all the rest and is most commonly known as acute rheumatic fever. I shall speak simply of rheumatism, to refer to this condition, because it seems that the term applies properly to no other.

Rheumatism is an infectious disease that occurs in children or in young adults, sometimes with a very acute course, more often progressing slowly with several explosions of acute illness in which different symptoms may become especially prominent. It may subside and leave the patient in a state of apparent well being, but it usually produces permanent changes in the heart, which disable it to some extent and predispose it to secondary infections, which distort it still further and may lead to death. The diagnosis is made from the occurrence in one order or other of the symptoms mentioned above, no one of which alone, except perhaps the appearance of the peculiar subcutaneous nodules, is of absolute diagnostic value, although the anatomic changes seem to be perfectly specific and peculiar to this disease.

Other affections that might possibly be confused with rheumatism are numerous, if, as is so common, the joint pains attract especial attention. Thus, arthritis with painful swelling of the joints is a feature of many infectious diseases. Scarlet fever, an acute febrile disease with rash and with a streptococcal infection of the throat, which it seems may be an expression of the essential cause of the disease, is sometimes accompanied by arthritis. But this is a distinctly bacterial infection of the joint produced by the streptococcus, and usually looked on as a secondary infection. Destructive changes in the synovial membrane may result. There are also focal areas of myocarditis, which may be compared with those in rheumatism, but there is no difficulty in distinguishing them or in distinguishing the bacterial endocarditis that sometimes occurs as a complication.

Pneumonia and pneumococcal infections in general occasionally give rise to an acute bacterial synovitis or arthritis and also to a pneumococcal endocarditis, but there is no difficulty in distinguishing this from rheumatism by cultures and by the recognition of the conspicuous associated changes in the lungs or other organs.

Gonorrheal infection is sometimes followed by a destructive arthritis and also by gonococcal endocarditis, but the whole nature of the process is different from that in rheumatism and may be distinguished with sufficient ease. Epidemic cerebrospinal meningitis, dysentery and streptococcal and staphylococcal septicemias of whatever origin may all be accompanied by corresponding bacterial infections of the joints, with arthritis, but it is evident that the recognition of these well known diseases is readily possible, and that arthritis, in other words, is a complication of many infectious diseases and does not constitute an independent disease in itself. Tuberculous arthritis and arthritis in the earlier stages of syphilis have specific characters that allow them to be definitely recognized. Painful inflammatory affections of the joints become most conspicuous when they persist for a long time as chronic arthritis, and then it is usually difficult to recognize the nature of the primary infection. Thus, it is well known, and by some very stoutly maintained, that there may be a hidden focus of sluggish infection somewhere in the root of a tooth or in a sinus or a tonsil, from which an infection, or at least some injurious substance, is carried into the circulation and, reaching a joint, sets up a painful affection there. That this is a secondary effect is often shown by the removal of the source of the evil, after which recovery occurs. There are, of course, chronic forms of arthritis sometimes leading to atrophy and deformity of the bones and joints, in other cases to new formation of bony masses about joints with locking or ankylosis, or to fusion of the articulations of the vertebrae so that the whole spine becomes rigid. This is the group commonly called arthritis deformans, affecting young adults or much older people; but, although it is so common, we know nothing of its cause.

FEATURES PECULIAR TO RHEUMATISM

From all these diseases, rheumatism stands out sharply distinct. If attention is centered on the joint affection, it is soon realized that, although excessively painful, the changes in the joints in rheumatism differ

* Lectures given at the University of Buffalo, Jan. 22 and 23, 1925, on the Harrington Foundation.

from all the others in affecting especially the periarticular tissues and not being destructive. No bacteria have been found constantly present in the joint fluid, and the pain disappears after a time, leaving the joint almost unchanged from normal. In reality, the joint affections in rheumatism are only an incident in a serious disease and are temporary, producing no such grave anatomic changes as are found in the diseases mentioned above. Lasegue has said very aptly that rheumatism is a disease which "licks the joints but bites the heart."

Rheumatism as a disease of childhood runs a somewhat different course from that seen in adult life, in that some of the typical features are more pronounced, while others, such as the joint pains and the sweats, may never even appear.

In children it begins usually with feelings of malaise and dulness, very often with tonsillitis and soreness and reddening of the throat. This may disappear and later be replaced by chorea, which, in turn, after lasting for a time, may decrease and disappear. But careful examination may reveal a beginning murmur over the heart, or, before or during this time, there may be a painful swelling of one or more joints. Fever is irregular and more or less continuous, and there is some leukocytosis. Firm nodules may be found then in the subcutaneous tissues in certain places, and there may or may not be erythematous eruptions over the skin, or even purpuric or urticarial patches. These with a progressive anemia, with further evidences of valvular insufficiency, of myocardial injury and of pericarditis, often leading to dyspnea and cyanosis and final rapid cardiac decompensation and death, constitute the group of phenomena so characteristic as to be readily recognized. They may come in another order and be interrupted at any stage by intermissions or even by recovery; but the occurrence of several of these changes is enough to make us sure of the diagnosis.

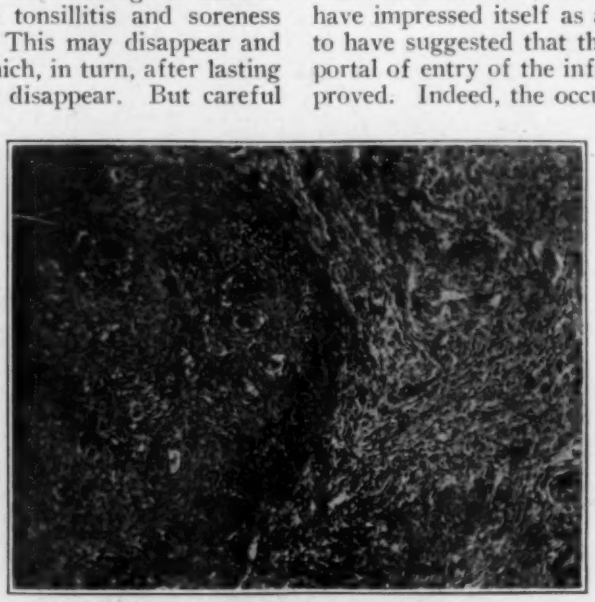

Fig. 1.—Subcutaneous fibroid nodule.

In adults, the intensely painful swelling of the joints is far more constant and distinctive, and the patient is disabled for the time and rendered immobile in a way seldom seen in the child. The fever is often higher, and sometimes reaches extreme heights. The acid, profuse, sour smelling perspiration is very characteristic. Subcutaneous nodules and changes in the skin, rare enough in children, are much rarer still in adults; but the injuries to the heart are just the same, although the pericarditis is less common.

To review the phenomena of this disease in somewhat greater detail we may begin with the onset, which is often so indefinite. Much has been made of exposure to cold by various writers, such as Roos and Wiesel; and Wiesel, Lowy and Stein and others emphasize the existence of a predisposing constitutional weakness; but these are vague suggestions, and one is not convinced of their great importance. More interesting are the impressions one receives from reading over the personal and family histories of the patients, in which it is so frequently found that other members of the family have suffered or are suffering, in the same house, from rheumatism. Cheadle, in his lectures, commented on this, and spoke of it as evidence in favor of the idea that rheumatism is a hereditary disease. It seems far more plausible, however, to regard it as an infectious and transmissible or contagious disease, in which the infection of children, in a house in which other and older members of the family are infected, takes place much as it does in tuberculosis.

Fedeli, Grenet, Cheinisse and others bring forward evidence of more or less cogent character to show that rheumatism may appear almost in epidemic form in restricted localities or among fresh troops lodged in barracks in which there were previously many soldiers with rheumatism. Tonsillitis is sufficiently frequent to have impressed itself as a prominent early feature and to have suggested that the tonsils may be the principal portal of entry of the infection, but this is by no means proved. Indeed, the occurrence of tonsillitis or angina is not at all constant, and H. J. Starling remarks that it is not so much emphasized by British observers as by American, although rheumatism is very common in England. Nevertheless, he recommends early tonsillectomy, while S. H. Hunt objects that this is not a preventive of recurrences. At least, no definite and characteristic lesion of the tonsils that would fix their position in relation to rheumatism has been described.

Chorea, which appears frequently as another early feature of the disease, is by no means constant, nor is the ultimate severity of the rheumatism necessarily proportional to the intensity of the choreic symptoms. C. F. Strong, analyzing a large number of cases, found that 20 per cent. of patients with chorea had rheumatism, 45 per cent. of patients with chorea had organic heart disease, while in 38 per cent. of the cases recognized as rheumatism such organic heart disease was present. He thought that recurrence of the chorea increased the probability of serious cardiac involvement, and found that when chorea and rheumatism were combined, 70 per cent. of the patients had heart disease. Obviously, the accuracy of these figures must depend on the precision of the diagnosis of rheumatism, which seems to have depended on the occurrence of joint pains; and since these may be absent in children, we are left with the information that chorea, rheumatism and heart disease are frequently associated. Other figures collected by various investigators give similar results, as, for example, those of the Collective Investigation of Rheumatic Fever in Great Britain, in 1888.

So few children die in the stage of chorea, and of these so few have been studied carefully to determine the microscopic changes in the central nervous system, that we are still almost uninformed as to the nature of chorea. Greenfield has reviewed the subject, and

various observers, such as Marie and Tretiakoff, have also described cases. There is great divergence in the descriptions, and it seems unprofitable to discuss them now—especially since I myself have had no single opportunity to make any first-hand study. But the more careful work seems to show that there are in the central portions of the brain, in the corpus striatum, the optic thalamus and the subthalamic region, perivascular infiltrations of cells, which, in a sense, suggest comparison with the lesions found in epidemic (lethargic) encephalitis, and perhaps with those seen in other infections, such as typhus. Undoubtedly, a clearer understanding of the anatomic changes in chorea will soon be forthcoming. Of the scars or remains of such lesions after the disappearance of the symptoms, practically nothing has been made known.

Of the erythematous eruptions in the skin much has been written, but all agree that they are very inconstant, and some, such as West, regard the coincidence as rare and of little or no importance. West has never seen erythema nodosum in rheumatism; and, although the writers of monographic articles, such as Rolly and Pribram, devote much space to its occurrence, they too agree that erythema nodosum is a condition that occurs independently and cannot be regarded as inseparably connected with rheumatic infection. Murray Bass describes erythema marginatum, papulatum and nodosum as probably related to rheumatism, and includes also descriptions of cases with marked purpura. The discussion of cases of erythema multiforme, with visceral complications in no way related to rheumatism, by Osler and others makes it seem very difficult to regard these cutaneous manifestations as part of the rheumatic complex.

Fig. 2.—Heart showing thickening and infiltration of auricle wall, Aschoff bodies in the myocardium and thickening of the mitral valve with vegetations, together with pericarditis.

Subcutaneous nodules have been minutely studied and seem to be most definitely and specifically related to the clear-cut disease rheumatism, occurring frequently but not constantly in that disease and never otherwise. They were first described by Meynet, but afterward by many, among whom should be mentioned Barlow and Warner, Cheadle, Patella, Brennemann, Reiman, Jacki, Frank and Carvasy. Nodules situated beneath the skin, particularly in positions in which the bones come near the surface, are prominent about the malleoli, along the crests of the ilium, over the spines of the vertebrae or the scapulae, and sometimes in the scalp. They vary in size from 1 or 2 mm. to 1 or 2 cm. and are painless, firm masses, which arise rather quickly and sometimes as quickly disappear, although they may persist for months or even years. When excised they are found to be gray, translucent nodules of tissue, rather richly vascular and sometimes showing to the naked eye yellowish opacities on the cut surface. They are of distinctly rarer occurrence in this country than in England, but I have had some opportunities to study them microscopically and find peculiarities of structure that agree closely enough with the excellent descriptions of Frank, Patella and others, so that it seems that it may be concluded that they have a specific and constant character.

One may begin with the opaque flecks in the more central part, which are found to be extremely irregular in size and outline, and composed of a shreddy, necrotic-looking material, which gives the fibrin reaction to some extent, but is apparently largely composed of necrotic tissue with only a little fibrin scattered through it. Whenever a distinct line of demarcation is visible between this and the living tissue (Fig. 1), one may find a palisade-like arrangement of large cells, with an irregular cell body and a large, deeply stained, vesicular nucleus or sometimes several nuclei. There is no distinctive granulation of the cytoplasm of these cells, but their protoplasmic processes extend among the neighboring cells. Outside this layer, which may be broad, there appears a highly vascular mass of branching and anastomosing fibroblast-like cells, which form a coherent tissue in which there wander a few leukocytes, frequently with eosinophil granulations and rather more mononuclear wandering cells. It is dfficult to feel sure of the nature of the large cells that form the immediate mantle about the necrotic material. They have, as shown with Wright's or Giemsa's stain, a distinctly outlined, branching cell body, which takes a purplish stain. The nucleus is large and vesicular, usually with a very distinct nucleolus and many irregularly arranged chromatin particles. Some have several nuclei, each with a distinct nucleolus. Wonderful mitotic figures are frequently found in these cells. They are paler than the nearby endothelial cells, and they seem to form a tissue—at least they are the only cells in a tissue which shows intercellular fibrils; and yet, while there is no doubt about the freedom of the mast cells and eosinophils that wander near, one cannot be quite sure about these. The trend of their form is that of the tissue, and they are distinctly and finely branched and attached to their neighbors by these

branches. On the whole, then, there are masses of tissue predominantly formed as a sort of fresh vascular granulation tissue of new fibroblasts concentrated about clumps of necrotic material, in the immediate neighborhood of which there is a mantle of peculiar form made up of large, deeply stained, branching cells, which seem slightly different from the fibroblasts and rouse the question as to their possible closer relation to such phagocytic, mononuclear, wandering cells or clasmatocytes as are so generally concerned when necrotic tissue is present. Their relation to similar cells in the specific lesions of the heart and other organs will be discussed later. The rapid disappearance of such nodules, so often described, must occur after all by an absorption of the necrotic material and fibrin, and the reduction of the new tissue to a scar.

JOINT LESIONS

The joint lesions have never been very thoroughly studied because the patients do not die, as a rule, when the affections of the joints are at their height, and I have had no opportunity to study them. There are observations in the literature, however, and perhaps the best descriptions are the recent ones of Fahr. The knees are most frequently affected, and after them joints of the ankle and foot, and in turn various other joints, even including the maxillary articulation; but often the pain subsides in one joint before it begins in another. There is swelling and reddening of the tissues about the joint, and the most exquisite pain and tenderness; but while fluid may accumulate to some extent in the synovial cavity, it is not a purulent exudate as in the case of the bacterial forms of arthritis. The surrounding tissues are infiltrated with a serous, sometimes hemorrhagic fluid, and there are ecchymoses in the synovial membrane and, as Fahr shows, the formation of a thin layer of vascular new tissue. Indeed, he could recognize in the neighboring connective tissue at times such groups of large cells may be regarded as analogous to the so-called Aschoff bodies, later to be described in the myocardium. It appears, therefore, to be, in all probability, a specific inflammatory process—the peculiar effect of the infectious agent that is responsible for all the lesions of rheumatism. That nodular new formations of tissue having a peculiar and specific character are found in the tendinous insertions and in the galea aponeurotica (Jacki) is quite consistent with this idea.

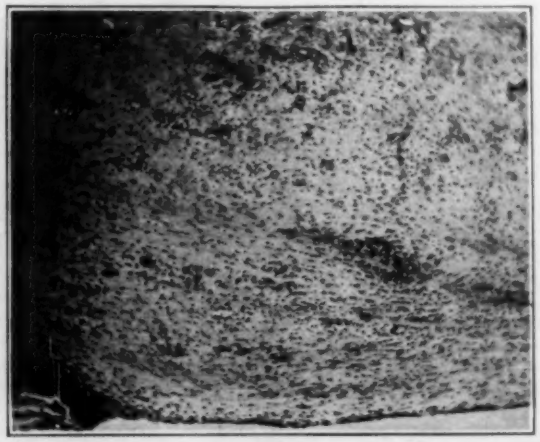

Fig. 3.—Mitral valve with vegetation and with cluster of large cells about a hyaline fiber; general vascularization of the valve.

Bouillaud's cases on which he based his law of the coexistence of endocarditis with rheumatic affections of the joints generally showed a great purulent exudate in the joints; and as there were often cases of obvious bacterial infection, such as puerperal septicemias, and as the diagnosis of endocarditis was frequently made at necropsy on the ground of a red staining of the endocardium and aorta, it seems probable that he was seldom really dealing with rheumatism and that there was something of the accidental in the establishment of so true a law.

HEART INVOLVEMENT

We come now to the involvement of the heart, which is by far the most profound and destructive effect of rheumatism. It seems that here the infection concentrates its chief attack, and there develops most profusely the characteristic reaction of the tissues. The whole heart is affected, but there is a predilection for certain localizations.

Doubtless the first effect that is readily recognizable clinically comes from changes in the valves, for a soft systolic murmur is usually the first thing heard. Later, however, there are evidences of myocardial disability, with periods of cyanosis and dyspnea, and there are signs of pericarditis. Since the end-result is generally found to be an obliteration of the pericardial sac by adhesions, it is evident that any friction rub must sooner or later disappear. Extreme symptoms of cardiac decompensation with dilatation of the heart are the usual precursors of death. If, however, the patient survives, it is with evidences of distortion of the valves, and at least some myocardial disability. The grafting of streptococcal and other infections on such injured valves appears to be very common, but death may occur without that and without evidences of fresh rheumatic lesions, so that sometimes one must assume that there is a final overburdening of the heart after a long-continued struggle with an accumulation of injuries. Thus, at a recent necropsy I found in the greatly enlarged heart tricuspid, mitral and aortic stenosis with insufficiency, scars in the myocardium and only old remnants of the specific rheumatic lesions, so that death must have occurred long after the active destruction had been withstood, and as a result of the gradually increasing burden on the heart.

In the fresher cases, when death has occurred in a period of decompensation, usually after several febrile attacks, with joint pains and often a history of previous chorea, the heart is found enlarged and enveloped in the adherent pericardium, whose layers are thickened by a deep red granulation tissue and held apart here and there by a film or masses of fibrin. Sometimes there is no pericarditis, or there is a fresh exudation of a little fluid with fibrin covering the pericardial surfaces, or there may be complete and old adhesions from which all the fibrin has disappeared. Occasionally there are ecchymoses in the epicardial and parietal pericardial tissues. When the heart is opened, the muscular walls of the ventricles are found to be hypertrophied in varying degrees. Most of the endocardium is smooth, but the valves are distinctly diseased. Most commonly the mitral valve is affected and after that the aortic, then the tricuspid. It is surprising to find that the tricuspid is involved in about 40 per cent. of the cases. In all, one may observe a thickening of the

tissue of the valve, including that of the chordae tendineae, and along the line of closure there are generally small, yellowish, rather translucent vegetations, which are fairly tough and are dislodged with difficulty. They are by no means like the granular crumbling thrombus masses so commonly seen in the various types of bacterial endocarditis. The thickening and shortening of the valves is more marked in the cases with a longer history of repeated attacks, until in the older cases there is not only insufficiency but stenosis at these orifices.

Vegetations seldom extend downward on the chordae tendineae—indeed, I have never observed that to happen, although it is so characteristic of the endocarditis produced by *Streptococcus viridans*. On the other hand, I have found recently a very gross, coarse lesion of the wall of the left auricle, extending upward from the root of the posterior leaflet of the mitral valve in the form of a corrugated, thickened patch, often with a rough, dull, fibrinous layer covering its surface. When it is cut through vertically, it is found to constitute a great thickening of the lining wall of the auricle inside the muscular layer. But, in addition to this, the whole wall of the auricle becomes greatly thickened by the dense infiltration of the subepicardial tissue, extending into the region of the auriculoventricular sinus and a short way downward over the ventricle. The muscular layer of the auricle wall is thus embedded in a purplish-gray tissue, and becomes very inconspicuous. The coronary arteries and sinuses are likewise buried deep in this edematous looking tissue.

Fig. 4.—Inner wall of left auricle with Aschoff bodies and hyaline lining layer.

The muscular wall of the ventricle may show no alteration visible to the naked eye, but in at least one case I have been able to see very clearly small pearly white foci, in numbers, scattered especially in the muscle near the auriculoventricular ring. On microscopic examination these proved to be Aschoff bodies, so that it must be stated that they are at least sometimes visible to the unaided eye (Fig. 2).

Careful examination of the trabeculae and of the bands which sometimes cross the ventricle may show them to be thickened by some subendocardial infiltration, but it is unusual that one can see anything of this sort. In one case, I found the whole upper part of the interventricular septum sunken from the general surface and yellowish, as though scarred. This change extended to the left from the septum membranaceum. The aorta and coronary arteries usually show no obvious alteration.

MICROSCOPIC CHANGES

Microscopically, the changes in all these tissues of the heart show an extraordinary uniformity, although one can clearly distinguish focal destructive and proliferative changes from the more diffuse infiltration of an inflammatory exudate.

Aschoff has, as is well known, described as specific lesions due to the rheumatic virus certain nodular groupings of cells in the myocardium of the left ventricle, usually in the neighborhood of small branches of the coronary arteries, and composed chiefly of conspicuous large cells with one or more large vesicular nuclei. These are clustered together, often in a somewhat spindle-shaped collection of connective tissue fibrils, many of which seem to be new-formed. They are accompanied, as a rule, by rather numerous mononuclear wandering cells of small size, and by some leukocytes. No new blood vessels or capillaries seem to be specially formed to supply them with blood, and they are not formed in the wall of the coronary vessel; nor, indeed, do they surround the vessel, but usually occur in the perivascular connective tissue a little removed from the vessel itself. In the center there is often a strand or clump of red-staining material, which seems to be necrotic tissue, but which does not usually give a distinct fibrin reaction. This is not found in the older and more mature nodules, in which, after the lapse of sufficient time, the cells having wandered away, leaving only the large ones, the whole is ultimately reduced to scar tissue. Geipel, Bracht and Wachter, Carey Coombs, Thalheimer and Rothschild, Butterfield, Fahr and many others have described these areas in detail and have discussed their specific relation to rheumatism and the orgin of the remarkable large cells. Now, every one agrees that they are peculiar to rheumatism and that the large cells are not derivatives of the muscle cells of the myocardium, but that they probably belong to the group of large mononuclear wandering cells, as Aschoff first thought.

Aschoff and Tawara have emphasized the frequency of their subendocardial localization. Cohn and Swift, White, Christian, Butterfield, Parkinson and others have studied in various ways the arrhythmias, sometimes amounting to heart block, which are common in rheumatism, and an explanation for them has been sought in the involvement of the ramifications of the conduction system in the Aschoff bodies and diffuser infiltrations of wandering cells, which I too have so frequently found near the endocardium in the trabeculae and isolated conduction bundles which run to the papillary muscles and to other parts of the ventricular wall. In many instances, the tissue just below the endocardium shows a long strand or layer of red-staining material, which appears to be coagulated, and about which the large cells mentioned above are arranged. These are always accompanied by a host of mononuclear cells, with many polymorphonuclear leukocytes, mast cells and some eosinophils.

The further distribution of such lesions is a subject of much interest. They are probably more abundant in the basal portion of the ventricular wall than elsewhere in that muscle, but they extend as we have seen far toward the apex in the subendocardial tissues and throughout much of the interventricular septum. Lesions of the same character are found in the substance of the valves, especially, perhaps, in the mitral

valve (Fig. 3). In the sections that pass through one of the small vegetations, it may be seen that the whole tissue of the valve is generally thickened by the formation of new connective tissue cells and new blood vessels; but especially striking is the coagulation of some portion of a strand of connective fibers about which a mantle of radially arranged large cells, such

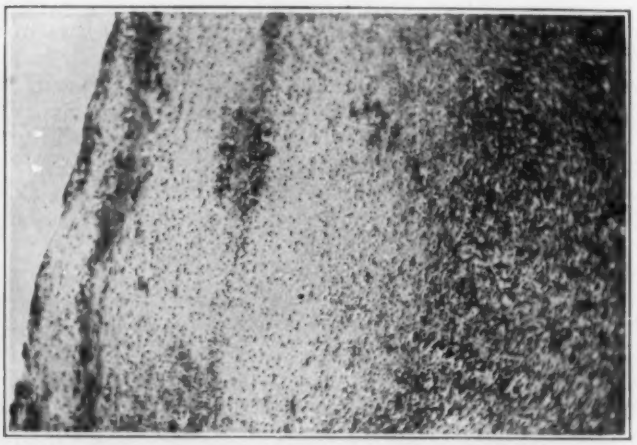

Fig. 5.—Auricle wall with hyaline strands and clustered cells.

as are found in the Aschoff bodies, is collected. Numerous mononuclear cells are clustered about and widely spread through the valve, and one receives the impression that the hyaline fibrinous coagulum, which overlies such changes in the valve, may have originated from such an injury of the substance of the valve, rather than from the lodging of the virus on the endothelial surface from the blood stream. In the root of the valve and in the tissue about the angle formed by the valve with the heart wall, such accumulations of cells, usually about a necrotic fiber or clump of coagulated tissue, are very constantly seen, and hyaline thrombus material is very commonly found in this angle projecting into the ventricular cavity.

Most striking is the alteration in the wall of the auricle and in the auriculoventricular ring tissue. Sections of the rough patches described above as occurring conspicuously on the wall of the left auricle show the lining surface converted into a hyaline, rough, red-staining layer beneath which the fibroblastic layer, normally so beautifully arranged in a regular elastic network, is distorted by the presence of many large collections of the same great cells that are seen in the Aschoff bodies (Fig. 4). Very frequently it is plainly seen that a band of necrotic tissue is surrounded by these cells. Such a band may run parallel with the surface or irregularly downward through the thickness of the wall (Fig. 5). But in other cases, the larger cells are arranged in groups in which the order seems guided by the arrangement of the elastic fibers. Excessive accumulation of leukocytes and of mononuclear wandering cells all through this tissue and extending out to the muscular layer and through it to the fatty layer beneath the epicardium is the rule, and this applies also to the greatly thickened auriculoventricular tissue about the coronary vessels. Study of this tissue shows exactly the same processes. Aschoff bodies are found in the neighborhood of the coronary arteries (Fig. 6), and throughout the subepicardial tissue there are often found nodules or masses of the large cells clustered about a coarse connective tissue fiber which is necrotic where it is surrounded by the cells. In cross section, such a group presents a starlike arrangement; in the longitudinal section, it is feather-like (Fig. 7).

BLOOD VESSEL INVOLVEMENT

Involvement of the walls of the blood vessels of the coronary system is not very common, except in the most severe cases. I have seen multiple thromboses of coronary arterioles, however, following destruction of the wall of the vessel, with some of the large cells in immediate relation with the outer margins of the tissue, and I have seen destruction of portions of the walls of large coronary sinuses with thrombus formation over those patches. It has been suggested that the rapid and extreme myocardial disability may be directly due to the occlusion of such vessels or even to their compression by adjacent Aschoff bodies, and this is perhaps as plausible an explanation as any and more easily accepted than the suggestion that it may be due to the involvement of the conduction bundles.

SPECIFIC AND PECULIAR LESIONS

In the heart I wish to emphasize especially the extremely widespread distribution of the lesions that seem specific and peculiar to rheumatism. Those described by Aschoff and others as occurring in the muscular substance of the ventricles are also found, as a few writers have stated, in the substance of the valves, and far more abundantly, as I have recently observed, in the lining and whole wall of the left auricle. Doubtless the whole substance of the heart is more or less involved. The pericardial granulation tissue sometimes shows such Aschoff bodies in its visceral layer, but I have never found them in the parietal layer. Especially interesting is the apparent localization of the virus in foci usually about a fiber of connective tissue, which at that point becomes necrotic, after which the large wandering cells range themselves radially about it and are accompanied by a diffuse exudate of other smaller wandering cells. This is seen everywhere in the myocardium, the valves and the walls of the auricle, and apparently quite as well in the subcutaneous nodules and in the similar lesions found in the periarticular tissues and in tendinous insertions and fasciae. Klotz and Pappenheimer and von Glahn have described focal lesions in the walls of the aorta, and I have seen something of this sort too;

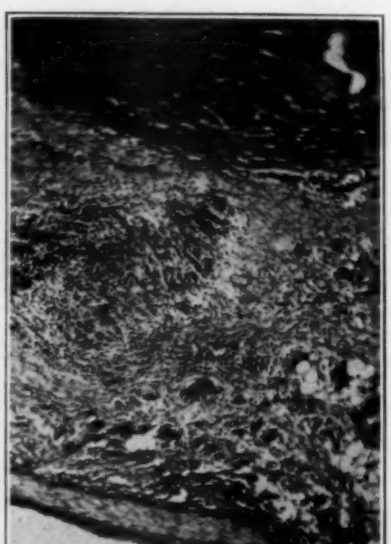

Fig. 6.—Aschoff body in the tissue near a coronary artery in the auriculoventricular tissue.

but they seem to be by no means so clear and distinct as those found in the heart.

CAUSATION

As to the cause of the disease, little can be said. It seems certain that rheumatism is caused by a specific infectious agent of some peculiar kind, not recognizable

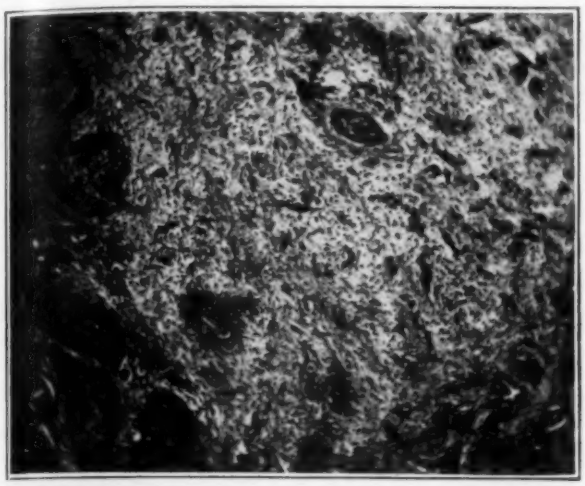

Fig. 7.—Radial cluster of large cells about a hyaline fiber in the diffusely infiltrated outer wall of the left auricle.

by our present methods of study and not as yet found to be transferable to laboratory animals. The constancy and peculiarity of the characteristic lesion makes it seem very improbable that any of the numerous forms of bacteria that have been isolated from such cases can have a true etiologic relation to the disease.

FRACTURES OF THE HEAD AND NECK OF THE RADIUS

A STUDY OF END-RESULTS *

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In this paper I present the end-results, as far as are known, of forty-seven cases of fracture of the head and neck of the radius. These fractures were for the most part simple fractures of the head and neck, or some part of them. Some were comminuted fractures of the head, with and without displacement of the fragment or fragments, and others were more severe and complicated fractures involving the whole elbow joint structure, generally comminuted in type and precluding any possibility of a good functional joint. Yet the results on the whole were uncommonly good, and fractures of the head of the radius are of rather surprising frequency, much more so, in fact, than the literature, which is scanty, leads one to suspect.

In a review of the literature, which is at the best scanty, and not particularly satisfactory from the point of view of pathology or the study of end-results, there are a good many conflicting statements. In one textbook of surgery it is stated that very few cases of a fracture of the neck of the radius have been recorded, and that such a fracture may be followed by suppuration of the joint, or by bony union. It is stated that there is a possibility of making a diagnosis by localization of the pain, and by recognition of the failure of the head to share in rotary movements with the shaft of the radius. It is also stated that removal of the head of the bone is generally necessary to prevent ankylosis of the joint.

In another textbook of surgery it is stated that fractures of the upper end of the radius may be readily followed by total loss of power of rotation, from the welding together of the radius and ulna by vicious callus. One other textbook, which has to deal entirely with the treatment of fractures, states that fractures of the head or neck of the radius are rarely unassociated with other lesions of the radius and ulna. The head of the bone, it is stated, does not usually rotate with the shaft. Beyond that it says nothing as regards treatment or methods of treatment or end-results.

The most recent article by Skillern,[1] in 1917, states that it is an injury which is common, and is commonly overlooked. He believes that falls on the outer side of the elbow are likely to fracture the head of the radius, as a result of its exposed subcutaneous position. He believes that the head of the radius is compressed between the impinging force from the outside and the buttressing coronoid process, with the result that a portion of the head of the radius is broken off. He describes a "wincing" tenderness elicited by direct pressure on the radial head as the chief sign of this fracture, and also pain produced by rotation of the

Fig. 1 (Case 6).—Comminuted fracture of whole elbow; fracture dislocation of head of radius.

radius, both signs, of course, being common. He believes that an internal angular splint is the most satisfactory method of immobilization, which he believes should be maintained for from three and one-half to four weeks before starting passive or active motion.

* From the Orthopedic Clinic of the Cambridge Hospital.
* Read before the Boston Orthopedic Club, Feb. 24, 1925.

1. Skillern, P. G.: Fracture of Head of Radius: Its Mechanics, Signs, Diagnosis and Treatment, Med. & Surg. 1: 50 (March) 1917.

Grossman [2] reports sixteen cases of fracture of the head and neck of the radius, which is about 10.5 per cent. of a series of 150 fractures of the elbow.

Fig. 2 (Case 6).—One and one-half years later: flexes to just beyond right angle; extension 15 degrees beyond right angle; normal supination and pronation.

Most of these fractures were of the head. None of the cases showed any marked displacement of the fragments. The chief complaints were pain and disability. He believes that acute flexion of the elbow is the better position for fixation, and he believes that baking, passive and active motion should be begun as soon as fluid in the joint disappears. The prognosis, he states, is good in all cases, except those in which the fragment which has been displaced is too small to be replaced.

Fig. 3 (Case 14).—Impacted fracture of neck with considerable lateral displacement, about half of head. No operation; result not known.

Speed [3] describes types of fractures of the head of the radius, and states that they may be divided into two classes—the complete and the partial fracture. He further subdivides the complete fractures into partial or marginal types, and total, including comminutions or crushings with deformity of the head. In incomplete fractures, he states, there are fissures which usually extend into the neck, the fragments remaining more or less in contact. He also states that fair retention of the normal configuration of the radial head is essential to the function of the elbow joint. He states that for its rotary motion it must be perfectly round to fit into the radial notch of the ulna, where it is held by the annular and capsular ligaments. This, theoretically, is sound, but does not work out in practice or in the study of end-results.

Articulation of the head of the radius with the ulna involves only a small portion of the head at any one time, and the capsular and annular ligaments that surround the head of the radius are sufficiently elastic to allow for even marked variations in the shape of the head, so that pronation and supination, even with considerable deformity, can be easily and normally accomplished. He believes that in neglected cases, ankylosis of the elbow frequently results. This I cannot subscribe to, and, I believe, is a theoretical possibility and very rarely, if ever, a probability, unless associated with general comminution of the whole elbow joint.

He believes in active motion after twelve or fourteen days, and also believes that resection of the head of the radius is indicated primarily, unless the fracture is a mere crack, which again I believe is unnecessarily radical surgery and a procedure which would not be indicated, provided one were familiar with end-results.

Fig. 4 (Case 8).—Fracture of neck of radius with dislocation of head forward; one and one-half years later, normal extension and flexion; supination and pronation nil; forearm fixed midway between supination and pronation; to be operated on.

He believes that early operation is indicated; that broken and fragmented pieces should be removed, and besides that, enough bone should be removed to insure perfect freedom of the joint. I believe that this is dangerous teaching and, in the vast majority of cases, totally unnecessary.

Cotton [4] divides fractures of the upper end of the radius into three groups: (1) those which occur at the neck, below or within the annular ligaments; (2) fractures just behind the head, where in these cases there may be a splintering of the head or an impaction, and (3) those in which there may be a splitting off of a part of the head. It seems to me that this is the most natural grouping, and one which we find clinically as the result of these accidents.

He is not as radical in his treatment as Speed, except in cases in which there is a large loose fragment or a loose head, which he believes should be excised. He does not believe in primary excision of the head in impacted types, even with displacement of fragments, unless there is sufficient displacement to interfere with free rotation.

2. Grossman, Jacob: Fracture of the Head and Neck of the Radius, New York M. & S. J. & M. Rec. **117**: 472 (April 18) 1923.

3. Speed, Kellogg: Fracture of the Head of the Radius, Am. J. Surg. **38**: 157 (June) 1924.

4. Cotton: Dislocations and Joint Fractures, Ed. 2, Philadelphia, W. B. Saunders Company.

I think that this review of the literature gives us a fairly good cross-section of the ideas that exist with regard to this type of fracture, and one can see that there is considerable divergence of opinion. Speed takes the radical point of view, Cotton the midway position, and Grossman, who reports sixteen cases of simple impactions, the conservative, nonoperative treatment.

Of course, there are all types of cases, and under the proper conditions any procedure may be carried out that is properly indicated, radical, conservative or midway. It is generally unfair to lay down hard and fast rules of treatment with regard to any type of fracture.

ETIOLOGY

The cause of these fractures, except that of a fall, is most vague. The mechanics required to produce a simple impaction of the neck, or a chip or vertical crack of the head, is probably a straight thrust, parallel to the long axis of the radius, sometimes with the arm straight and then again with the elbow slightly flexed

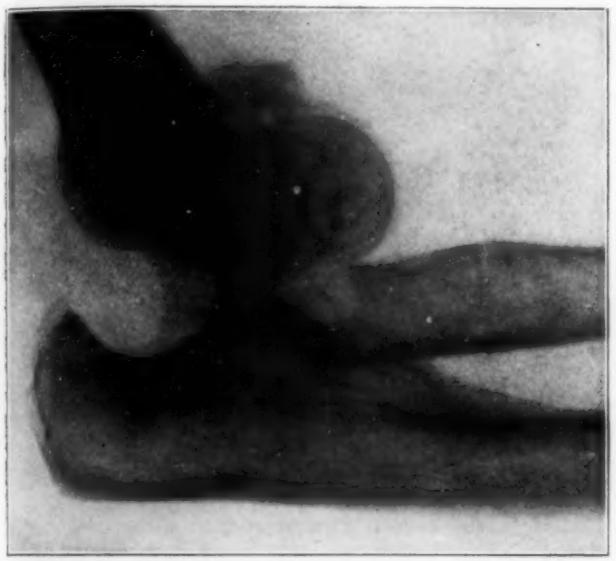

Fig. 5 (Case 16, before operation).—Fracture of neck of radius with dislocation of head and dislocation of elbow; operation; dislocation reduced and head of radius removed.

to localize the force on one part of the head more than on the head as a whole, resulting in a depressed fracture of part of the head, or maybe an impaction of the head and neck. In the more severe types, in which more force has been exerted, the force is generally direct, as from a fall on the elbow itself, and generally resulting in an elbow joint that shows more than one lesion.

Not infrequently, one sees an injury to the head of the radius associated with a dislocation of the elbow joint. This injury may result in either a chip off the head of the radius, where it has passed under the capitellum in its excursion backward; in an impaction of the head and neck rarely, to even a complete fracture of the neck of the radius, with marked displacement of the head.

In attempting to obtain an accurate description of the method by which many of these persons obtained their injury, no evidence worthy of credence was adduced, for the patient was not in a mental state to analyze his method of approaching the ground just at that instant. The first thing he realized was that he was there. This is true also in falls from a height.

DIAGNOSIS

The diagnosis is usually easy. In the simple cases, in which there is a crack through the head without

Fig. 6 (Case 16).—Motion, six months later, one-half normal in all directions.

displacement, rotation of the forearm is very painful. The hand is held pronated, and attempted supination causes exquisite pain. Flexion and extension can be carried out pretty well, but cause pain in the limits of motion. Localized pressure over the head of the radius is very painful, and elicits the type of discom-

Fig. 7 (Case 10).—Impacted fracture of neck of radius; splint one month; normal arm.

fort that has been described by several observers as "wincing pain." In the more severe types of fracture, with fracture dislocation of the head of the radius and with other bones that go to make up the elbow joint involved, the case resembles any severe injury to the elbow joint, and the diagnosis can then be made only by means of a roentgen-ray examination.

TREATMENT

The treatment of fractures of the head and neck of the radius varies considerably with the type of fracture as shown in the roentgenogram. The fractures of the head itself, where there is only a vertical crack extending from the elbow joint cavity into the neck, or a

Fig. 8 (Case 48).—Vertical crack through head of radius without displacement of fragments; three weeks after accident, very nearly normal motion.

horizontal crack parallel to the articular surface in the head itself, need no other fixation than an internal angular splint, for about two weeks, followed by massage, baking, and active and passive use. A good result is generally obtained. Occasionally, even in these simple types, there persists for a long time some disability in full extension of the arm, but supination and pronation are soon normal.

The simple impacted fractures of the head and neck so commonly seen, so far as the end-results go, need no operation. Even with considerable displacement of the radial head on the shaft, there seems to have

Fig. 9 (Case 12).—Deformity of head of radius from arthritis; result, flexion and extension of elbow slightly limited from arthritis; supination and pronation about half.

resulted good eventual function in this series. The relation of the articular surface of the head to the ulnar and to the capitellum does not seem to be of great importance, except as originally laid down, to a good functional arm. However, if such a condition is found at once, that is, an impaction with considerable displacement, laterally and anteriorly of the head of the radius, no harm can result in attempting by an operation to replace the head in its proper position on the end of the radial shaft, and I believe that in most cases this should be done, so as to restore as much as possible normal anatomic relations.

The fractures of the head which show in the roentgenogram that there has been a piece of bone chipped off, or show a marked alteration of the plane of the joint surface, generally require, at least theoretically, an operation to remove the loose fragment that acts as a foreign body in the elbow joint. This loose piece may also block free joint motion unless it is removed. Chips of bone from the head of the radius, as the result of dislocations of the elbow, should also be removed.

Fracture dislocations of the head of the radius, when there has been a complete separation of the head and neck with displacement of the head, should be operated on, and the head removed. This is not generally enough to do, however; but to insure free motion in supination and pronation, the neck of the radius should be removed nearly to the bicipital tuber-

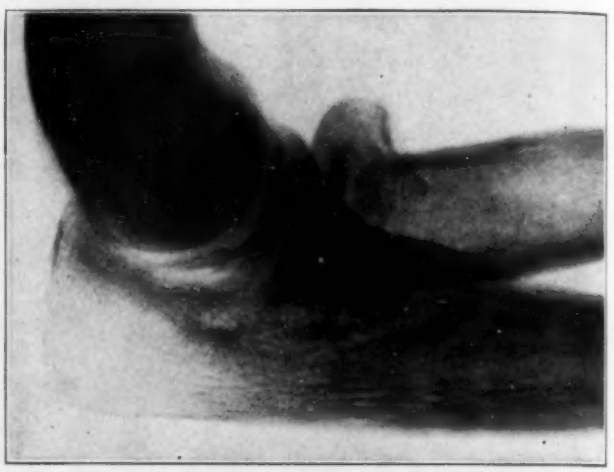

Fig. 10 (Case 15).—Fracture of neck, with lateral displacement of about one third of head; no operation; perfect result in three weeks.

osity, after splitting of the orbicular ligament. The danger of the radius riding forward from the pull of the biceps, as the result of the escape of the neck from the orbicular ligament, is not of sufficient importance to weigh against free supination and pronation, which is often as limited after incomplete removal of the head, when the neck has been left, as before operation.

The more complete removal of the upper end of the radius, following removal of the fractured head, will probably give far better end-results. This procedure, however, is not indicated as a routine in all cases, but only in those which necessitate a complete removal of the head.

The use of an internal angular splint is sufficient in some cases, especially those in which there has been only a crack in the head or an impaction. In others, in which there is an anterior displacement of the fragments, it would seem that acute flexion would be the better position, as a method toward reducing the fracture.

Short fixation is necessary, from two to three weeks, baking and massage being begun about the second week, and active use and no sling after the third week, in the average case. The cases that show comminution of the elbow joint must be handled as conditions per-

mit, and no rules can be laid down for them except general ones applying to all fractures of the elbow.

Many of the end-results reported here are from the clinic at the Cambridge Hospital; I am indebted to my colleagues there for permission to look up their cases and report on the results. Out of forty-seven cases I was able to get end-results on twenty-eight, leaving nineteen cases with no result known. Many of these nineteen were simple cases, however, and it is fair to assume that many of them had good functional arms. Three cases showed only fair function. Eighteen showed perfect results with no disability, and seven had good results as far as function went, but not perfect arms.

The accompanying table gives in detail the cases and results.

Review of Cases

Case	Age	Type	Result
1	20	Fracture head of the radius with loose fragments, following dislocation	Not known
2	29	Comminuted fracture of elbow joint; fracture dislocation head of the radius	Not known
3	28	Comminuted fracture of elbow, including lower end of humerus; fracture of head of radius with displacement of fragments	Not known
4	..	Fracture of neck of radius; displacement of head	Not known
5	25	Comminuted fracture of upper end of ulna and head of radius	Not known
6	57	Comminuted fracture of whole elbow; fracture dilocation of head of radius	1½ years later flexes to just beyond right angle; extension 75% of normal; normal supination and pronation
7	50	Impacted fracture of head and neck of left radius	Perfect result, 4 years later; wore splint 3 weeks
8	..	Fracture of neck of radius with dislocation of head forward	1½ years later, normal extension and flexion; supination and pronation nil; forearm fixed midway between supination and pronation; to be operated on
9	11	Fracture of neck of radius with displacement of head outward	Normal arm 6 months later
10	11	Impacted fracture of neck of radius; splint one month	Normal arm
11	5	Impacted fracture of neck and head with displacement; internal angular splint	Normal arm 6 months later
12	61	Deformity of head of radius from arthritis	Flexion and extension of elbow slightly limited from arthritis; supination and pronation about half
13	69	Impacted fracture of head and neck; mushrooming of head	Not known
14	? (Child)	Impacted fracture of neck with considerable lateral displacement, about half of head	Not known
15	35	Fracture of neck with lateral displacement of about one third of head	Perfect result in three weeks
16	64	Fracture of neck of radius with dislocation of head and dislocation of elbow; operation; dislocation reduced and head of radius removed	Motion at present one-half normal in all directions
17	..	Impacted fracture of head and neck; lateral displacement outward of head, with dropping of articular surface	Normal arm eight years later
18	9	Impacted fracture of neck of radius	Normal motion in 3 months
19	13	Comminuted fracture of elbow joint, with fracture of head of radius	Not known
20	13	Typical impacted fracture of neck just below mushrooming of head	Not known
21	22	Fracture of upper end of left radius, into joint through head; slight downward displacement of head	Not known
22	..	Typical fracture of head and neck	Not known
23	20	Fracture of head of radius, with displacement of fragments	Not known
24	40	Impacted fracture of head and neck, without displacement	2 months later, supination and pronation normal; flexion normal; extension to within 15 degrees
25	8	Impacted fracture of neck below epiphyseal line; slight anterior displacement of fragments	Discharged one month after fracture, with normal motion
26	..	Complete fracture of head of radius, without displacement, 1917	Feb., 1925, arm in good condition; no stiffness, pain, deformity or trouble of any kind
27	..	Incomplete fracture of head of radius and external condyle of humerus	Not known
28	46	Dislocation of elbow, with fracture of the head of radius, with considerable callus formation about joint surfaces	Accident was in Sept., 1922, and the result now shows normal motion in flexion, supination and pronation; extension is limited to within 15 degrees of absolute extension
29	..	Impacted fracture of head and neck of radius in 1920	Normal motion; no discomfort
30	60	Fracture of neck of radius without much displacement; fracture of olecranon and upper part of shaft of ulna	Fracture, July, 1924; Feb. 18, 1925, extension limited 5 degrees; flexion to just beyond a right angle; supination, half normal; functionally she has a good arm
31	51	Comminuted fracture of elbow; T fracture into joint; fracture of the head of the radius	Injury in Nov., 1924; condition at present, half normal motion; extension, flexion and supination half
32	..	Fracture of anterior portion of head of radius; some depression and separation of joint surfaces	Injury, Jan. 15, 1923; end-result, 2-12-25, arm in good condition; no stiffness, pain or deformity of any kind
33	..	Incomplete fracture of head of radius, with slight downward dropping of articular surface	Not known
34	..	Incomplete fracture of head of radius; no displacement; vertical crack into joint	Not known
35	..	Fracture head of radius; vertical crack through articular surfaces	Cured and perfect result at end of three weeks
36	..	Horizontal crack just below articular surface of head of radius	6-22-24; result, 2-11-25, arm in good condition, but has to favor it; is working as stenographer, and finds arm gets tired easily; is not able to bend arm quite to shoulder; has no pain, except when very tired arm may ache; is very pleased with condition
37	..	Fracture of outer edge of head of radius without displacement	June, 1924; arm in good condition now
38	70	Old fracture with partial dislocation of head of radius and fresh fracture of lower end of shaft of humerus	Not known
39	..	Incomplete fracture of head of radius without displacement; vertical crack into joint through middle of head	Not known
40	..	Crack through head of radius	Not known
41	..	Fracture of outer half of head of radius, with slight depression of outer fragments	Fracture, 12-6-24; result, 2-18-25, supination, and pronation normal; flexion normal; extension limited to within 15 degrees of normal
42	..	Fracture through head of radius running into joint vertically; no displacement	Arm satisfactory; has no trouble, no stiffness and no deformity
43	50	Impacted fracture of neck of radius, especially anterior and outer portion	Perfect result in 3 weeks
44	14	Triangular fracture head of radius, just below epiphyseal line without displacement	Fracture, Dec., 1924; Feb., 1925, has normal motion in flexion and extension; pronation and supination, one third; there was an old fracture of the elbow two years previous to this one
45	..	Incomplete fracture of head of radius; no displacement; slight impaction	Not known
46	13	Epiphyseal separation of fractured neck of radius with impaction; no displacement	Normal result in 5 weeks
47	..	Vertical crack through epiphysis, with slight displacement; fracture of internal condyle of humerus	Accident, August, 1924; still has moderate limitation of motion
48	55	Vertical crack through head of radius without displacement of fragments	3 weeks since accident; very nearly normal motion

CONCLUSIONS

1. Fractures of the head of the radius are fairly common.

2. Cracks in the head and impactions of the head and neck are the more usual types.

3. Loose fragments from the head should be removed. The head, when separated from the neck and dislocated, should be removed, with a generous piece of the neck, even through the orbicular ligament.

4. Results are good, as a rule; youth, as usual, is favored.

321 Dartmouth Street.

PRIMARY SYPHILIS OF THE ANO-RECTAL REGION *

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AND

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DETROIT

In presenting this report on primary syphilis of the anorectal region, we are constrained to mention the fact that proctology seems to be the one outstanding field wherein the charlatan still prospers. This situation is directly due to the distressing lack of systematic and comprehensive examinations of the anus, rectum and colon. When one considers that the majority of rectal carcinomas are discovered in the advanced, inoperable stage, having usually been treated for months as "intestinal indigestion" or "piles," and with the knowledge that 85 per cent. of the people suffer from some form of anorectal disease, it is difficult to understand why an examination of the rectum and anus is so commonly omitted.

In the course of our work in the rectal clinic of the Detroit city physician's office and Receiving Hospital, we are impressed with the large number of cases of primary syphilis involving the anorectal region. This

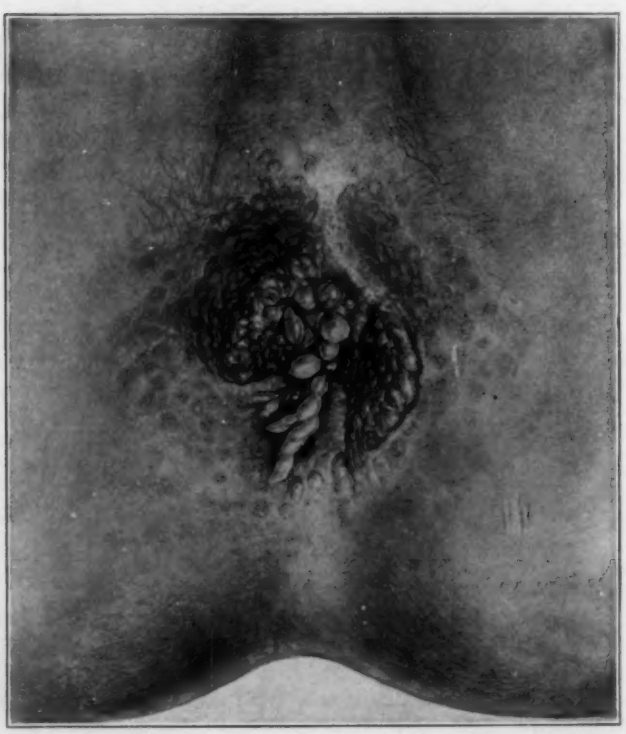

Fig. 1.—Chancre becoming obscured by condyloma; papule formation at the periphery; Stage B.

is distinctly in contrast with the experience of other observers, who are inclined to regard this type of extragenital lesion as more or less a rarity, and who accord it little clinical importance.

* From Department of Proctology, City of Detroit Receiving Hospital, and rectal clinic of Detroit City Physician's Office.

VIEWS OF OTHER WRITERS

MUMMERY:[1] Primary chancres are sometimes met with on the anal margin. . . . A chancre of the anus does not differ in appearance from one in the more usual situation.

LYNCH:[2] Primary chancre of the rectum, while comparatively rare, is occasionally seen. . . . Three such cases have come under the observation of the writer within the last ten years.

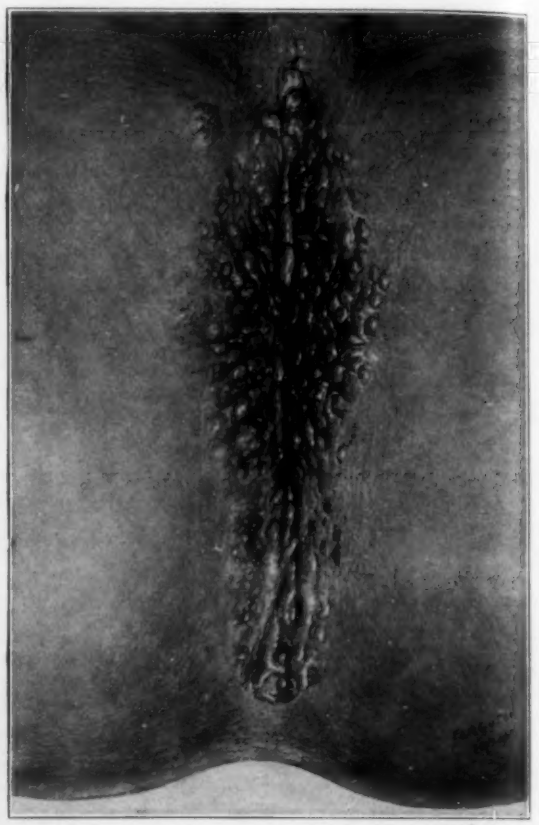

Fig. 2.—Diffuse and early condyloma developing four weeks after initial lesion. Spirochetes were demonstrated throughout the involved area. The Wassermann reaction was negative.

CRIPPS:[3] Syphilitic ulcerations, when found about the anus, are closely analogous to those about the mouth. They generally appear from three months to a year after infection, and are often coincident with the fading of the secondary rash.

BALL:[4] True chancre at the anus is very rarely met with.

Ball accounts for its rarity by the very slight disturbance to which it gives rise. He states that true chancres here, as elsewhere, have a hard, raised outline with indurated base, and might be mistaken for fissure, from which they are distinguished by the freedom from pain.

GANT:[5] The stage of incubation and characteristics of anal chancre are similar to those elsewhere, and lesions are single, firm, nonsensitive, have round, raised edges, a purplish base, and do not undermine the skin or mucosa. They cause discomfort during defecation and while walking, exude a slight nonirritating discharge, and show tendency to heal rather than spread.

PENNINGTON:[6] Anal chancres have the same appearance as those elsewhere: edges abruptly defined, the border elevated, a little undermined or not at all, and the whole area with the characteristic induration, and with practically no discharge.

1. Mummery, P. L.: Hand Book of Diseases of the Rectum and Anus.
2. Lynch: Diseases of the Rectum and Colon.
3. Cripps, Harrison: Diseases of the Rectum and Anus.
4. Ball, Charles: The Rectum,
5. Gant: Diseases of the Rectum, Anus and Colon.
6. Pennington: Rectum, Anus and Pelvic Colon.

The primary lesions will usually be discovered by the fact that the eruption or other phenomena of the secondary stage are present, though no chancre is found about the genitalia.

TUTTLE:[7] Chancre may be complicated with chancroid, thus causing a mixed sore. . . . *Auto-inoculation* is never a safe diagnostic guide in this region, because of the possible presence of pyogenic germs in the ulcer, which might make it successful even in cases of true chancre. Simple, hard chancres may be so irritated and infected . . . that they assume a phagedenic type.

ACTUAL FREQUENCY OF THE CONDITION

During the past year, from a group of 300 proctologic cases, there were twenty cases diagnosed positively as chancre, and five others that were probably positive, as is shown in the accompanying table. We can explain these figures in part by making allowance for the social status of the patients visiting this clinic, but we cannot escape the conclusion that conditions in other great cities are similar, and that we are making the positive diagnosis of anorectal chancres while many are overlooking them. The discussion of primary anorectal syphilis as found in the literature is very meager and incomplete, and the descriptions are inaccurate.

The anatomy of the anorectal region favors moisture with tissue maceration, while the constant presence of fecal contamination modifies, in no uncertain way, the course of the disease. When fully developed, anorectal syphilis is far different in appearance from the hunterian chancre as found on the genitalia. The following description must in no way be confused with "primary, secondary and tertiary syphilis." We distinguish three stages in the evolution of the characteristic lesion: (A) the stage of ulceration; (B) the stage of dermatitis, and (C) the stage of condyloma formation.

STAGE OF ULCERATION (A)

The ulcer occurs from two to four weeks after exposure, and may be located at any point on or proximal to the anal margin, but is commonly found at the posterior commissure. The organism undoubtedly gains entrance through a slight abrasion at the time of the unnatural sexual act (sodomy), which is the usual causative factor. As in simple ulcer (fissure), the skin edges tend to hypertrophy, forming a protective tag. This tag, or "sentinel pile," in nonsyphilitic cases, is smooth and covers the fissure like the cowl of a monk's robe, while in chancre the margin is reddened and rough, projecting angrily like a cockscomb, with often a crater within the margins of the ulcer. The base may be indurated as in genital lesions, but this finding is not constant. There is an exudate from the ulcer which is serous rather than purulent. It is decidedly acrid, causing irritation and early inflammatory reaction in the perianal skin, thus developing the B stage of dermatitis.

STAGE OF DERMATITIS (B)

During this stage, scattered papules of bright red are first noted within a radius of about an inch (2.5 cm.) surrounding the anus. The papules increase in number and may exhibit points of erosion on their surfaces. They are but slightly raised from the skin, which in the intervening areas is reddened and moist. The raphe leading toward the scrotum is swollen, and has the roughened, cockscomb appearance described as found at the edge of the ulcer (chancre) proper.

STAGE OF CONDYLOMA FORMATION (C)

With progress of the pathologic process (mixed infection), the epithelium heaps up more and more, while simultaneously there is a softening and maceration of the surface layers. The whole perianal region may be involved with condylomatous overgrowth, somewhat cauliflower in appearance, with fissures and lobulations raised from one-eighth to three-eighths inch (0.3 to 1 cm.). These exude a thin, foul fluid, having a characteristic sickish, musty odor.

PATHOLOGIC CONDITION

Microscopic section of some of the condylomatous mass demonstrates the epidermis to be markedly hypertrophic and, in places, even vesiculated. There is edema of the epidermis throughout, with marked hypertrophy of the papillae. There is intense and diffuse perivascular round cell infiltration of the true skin. Around the smaller vessels may be seen isolated areas of infiltration, made up almost entirely of plasma cells, a few lymphocytes and dividing connective tissue cells. There are no important changes in either the sweat glands or the sebaceous glands.

It is during the condyloma stage that the patients usually present themselves, the epithelial overgrowth often having completely obscured the initial ulceration.

Primary Syphilis of the Anorectal Region

Case	Age	Dark Field	Wassermann Reaction	Stage
1	23	Positive	.....	C
2	25	.....	.....	B
3	20	.....	.....	C
4	18	.....	.....	C
5	19	Positive	Negative	B
6	19	Positive	Positive	B
7	21	.....	.....	A
8	20	Positive	Negative	C
9	23	Positive	Negative	C
10	37	.....	Positive	C
11	19	Positive	Positive	C
12	18	Positive	Negative	B
13	21	Positive	Positive	C
14	19	Positive	Negative	B
15	19	Positive	Negative	A
16	18	Negative	Positive	..
17	23	Positive	Positive	C
18	..	Positive	Negative	C
19	20	Positive	Negative	A
20	24	.....	Negative	C
21	22	.....	.....	B
22	21	.....	.....	C
23	23	.....	Negative	C
24	18	Negative	Negative	C
25	29	.....	.....	C

As a rule, the Wassermann reaction is still negative, so that, unless the condition is recognized as primary syphilis, and the diagnosis confirmed by dark field examination for the spirochete, the erroneous diagnosis of simple ulcer or condyloma acuminata may be made.

Differing from simple ulcer, pain, though present, is not usually severe. The chief complaints have been of discharge and perianal discomfort. The information as to indulgence in pederasty was rarely volunteered, and as a rule was brought out only by persistent questioning. Generally, psychologic evidence was such as to enable one to suspect sexual perversion even before a history was obtained. Most of these cases occurred in young men during their late "teens" or early twenties.

In untreated cases, the condylomas may heap up in great masses, and take on the characteristics of granulomas of the tertiary type. Such was the condition in Case 16 of the series given. The history disclosed that the primary lesion had followed pederasty two years before. The condyloma had progressed to great hypertrophy. We were not able to demonstrate the spirochetes in the anorectal area, but the Wassermann reaction was ++++.

7. Tuttle: Diseases of the Anus, Rectum and Colon.

TREATMENT

The treatment involves an attack on the spirochete by the usual antisyphilitic regimen, the clearing up of the local pathologic condition by excision and cauterization of the condylomatous areas with the actual cautery, and rest of the sphincter ani by open or subcutaneous "sphinctotomy," as described by Martin.[8] Isolation precautions should be carefully observed.

SUMMARY

1. Primary syphilis of the anorectal region is by no means uncommon.

2. The chancre is accompanied early by a dermatitis and condyloma formation that distinctly modify its appearance.

3. The presence of a moist condyloma, especially in a young man, should suggest syphilis and be checked by dark field examination.

4. Condyloma acuminata—so called—is not necessarily nonsyphilitic, and is often very infectious.

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DIASTOLIC HYPERTENSION WITH INCREASED BASAL METABOLIC RATE *

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Although the cause and nature of hypertension are still unknown, certain groups of cases have been differentiated from the general mass of those with high blood pressure, and certain clinical associations have been established. Thus, it is generally accepted that patients with glomerulonephritis and hypertension, or with the vascular crises of lead, eclampsia or tabes, must be sharply distinguished from those with so-called essential hypertension. Among those belonging to the latter category, certain subgroups have been described: hypertension associated with myxedema,[1] and hypertension associated with tumors of the suprarenal cortex.[2]

There is another syndrome, in which hypertension is one of the presenting signs, but in which there is a concomitant group of symptoms which serve to separate it sharply from the ordinary picture of hypertension, and which warrant its classification as a distinct disease entity. The signs and symptoms characteristic of this syndrome may briefly be enumerated as hypertension with its ordinary cardiovascular sequelae, tachycardia, nervousness, loss in weight, and increased basal metabolic rate in the absence of signs of myocardial insufficiency.

Before presenting the evidence on which we have based our conclusions, we will briefly discuss two points that give rise to frequent misconceptions. Hypertension is a term that is used very loosely. Any temporary or permanent elevation of systolic pressure is frequently dignified by this appellation. The physiologic mechanism of simple systolic hypertension without change in the diastolic pressure is quite different from that in patients with permanent elevation of the diastolic pressure; the clinical course of the illness is vastly different. Such a phenomenon should be called systolic hypertension and should not be confused with diastolic or true hypertension, to which category belong the cases which we are discussing, and those from which we wish to differentiate them. A true hypertension may be defined as one in which the diastolic pressure is persistently above 90 mm. of mercury and in which cardiac enlargement is an invariable accompaniment, provided the condition has existed for a period of several months.

The measurement of the basal metabolic rate in patients with heart disease must be carried out with special precautions. It is common knowledge that myocardial insufficiency alone determines an increased heat production. Before one can assign any significance to high metabolic readings in such subjects, therefore, one must be certain that the heart is sufficient. Needless to say, we have used great care in regard to this point. As signs of a competent circulation we noted the absence of dyspnea on moderate exertion, the absence of congestion of the lungs and liver, and the absence of edema. In each instance the patient was subjected to a preliminary metabolic test, the readings of which were discarded, in order to acquaint the patient with the apparatus and to overcome the apprehension often exhibited by patients with hypertension.

The histories of five patients, who afford the basis for this discussion, follow. Only relevant facts are recorded.

REPORT OF CASES

Case 1.—E. I., a housewife, aged 45, whose family and past history were irrelevant, was admitted to Montefiore Hospital, Aug. 8, 1923. Menstruation was normal. Six months after admission, the menopause set in. In four pregnancies she had had two miscarriages. Six months before admission the patient began to grow weak and to lose weight. Dyspnea on exertion, frequent headache and vertigo became noticeable. Weakness and loss in weight were progressive, so that she had to give up her housework. Nervousness and insomnia were additional symptoms.

March 11, 1924, the patient was greatly emaciated; she weighed 70 pounds (32 kg.), was very irritable and emotional, and talked incessantly. The skin was soft and very moist, unusually warm and rather darkly pigmented, with excessive sweating in the axillae. No exophthalmos or thyroid enlargement was present, but there was forcible pulsation of the carotids. The lungs were clear. The heart was enlarged considerably to the left and downward and to the right; the beats were forcible and regular, with a rate of 140. There was a soft systolic murmur at the apex; the aortic second sound was markedly accentuated. The spleen was not palpable, and the liver was felt 3 cm. below the costal margin. There was some muscular weakness. The reflexes were exaggerated. There was a coarse tremor of the hands. The specific gravity of the urine was 1.018; there was a trace of albumin and there were a few hyaline and granular casts; the blood urea nitrogen was 9.3; the blood sugar was 161 mg. per hundred cubic centimeters. The phenolsulphonephthalein excretion was 45 per cent. in two hours; the blood pressure was 210 systolic and 110 diastolic. The basal metabolic rate was + 80 per cent., and the pulse rate was 128. The patient was reexamined in March, 1925, and her symptoms were much the same, although she had gained a little in weight and was stronger. The basal metabolic rate was + 84 per cent.; the pulse rate, 140; the blood pressure, 240 systolic and 135 diastolic.

Case 2.—R. H., a housewife, aged 42, whose family and past history were irrelevant, was admitted to Montefiore Hospital, March 25, 1925. Menstruation was normal. She had married at 25 and had been pregnant six times. Three pregnancies resulted in abortions, and three went to term. During

8. Martin, E. G.: Submucous Sphinctotomy, J. A. M. A. 79: 2160-2161 (Dec. 23) 1922.

* From the medical and laboratory divisions of Montefiore Hospital for Chronic Diseases.

1. Fishberg, A. M.: Arteriosclerosis in Thyroid Deficiency, J. A. M. A. 82: 463 (Feb. 9) 1924.

2. Oppenheimer, B. S., and Fishberg, A. M.: The Association of Hypertension with Suprarenal Tumors, Arch. Int. Med. 34: 631 (Nov.) 1924.

the last month of the last pregnancy, four years before, the patient was confined to bed with a cough and bloody sputum, but a normal delivery followed. Since then she had complained of palpitation, rapid pulse and dyspnea, and had twice entered a hospital for treatment. During the winter of 1924, she lost 31 pounds (14 kg.) within a short time, and began to perspire excessively. During that time she noted increased appetite and more frequent palpitation. She had become very nervous, irritable and weak within the past year, and had had severe headaches.

The patient was small and undernourished, with a darkly pigmented skin. There was no exophthalmos. The thyroid was not palpable. The lungs were clear. The heart was enlarged to the left and downward, with a systolic apical murmur; the aortic second sound was accentuated. The reflexes were exaggerated. There was no tremor. The urine showed a trace of albumin, no sugar, and nothing abnormal on microscopic examination. A concentration test showed moderate fixation of the specific gravity. The Wassermann reaction was negative. The blood urea nitrogen was at the upper level of normal. The blood count showed slight secondary anemia. April 2, 1925, the basal metabolic rate was +45; the pulse rate, 96. April 7, the basal metabolic rate was +39; the pulse rate, 96; the blood pressure, 260 systolic and 175 diastolic.

CASE 3.—H. L., a man, aged 37, whose family and past history were irrelevant, was admitted to Montefiore Hospital, Sept. 9, 1923. The onset of his present illness had been gradual, starting seven years before admission with headaches and weakness. He was told that he had high blood pressure. He began to lose weight, to perspire freely, and to complain of frequent palpitation, and in 1917 entered a hospital, where hypertension was diagnosed. The blood pressure was 170 systolic and 120 diastolic; the pulse rate, from 96 to 128. Six months later he went to another hospital, where tremor and slight thyroid enlargement were noted, and the diagnosis of exophthalmic goiter was made. Ligation of the thyroid arteries was performed, but gave little relief. In 1922, a partial thyroidectomy was performed. The symptoms of headache, weakness and palpitation persisted, and in 1923 another partial thyroidectomy was performed. No improvement was noted. He was admitted to Montefiore Hospital with the same symptoms that he had had before.

The patient's nutrition was fair. There was no exophthalmos. The neck showed scars of several operations, the carotids pulsated violently, and a small nodule of thyroid tissue was palpable on the left side under the sternomastoid muscle. The lungs showed dulness at both bases. The heart was enlarged in all directions, with a rate of 120 and the rhythm absolutely irregular (auricular fibrillation); there was a systolic murmur at the apex. Muscle strength was fair, and the reflexes were all increased. The blood pressure ranged from 180 to 190 systolic, and from 110 to 120 diastolic. The Wassermann reaction was negative. The urine had a specific gravity of 1.012, a trace of albumin, and granular casts. Blood urea nitrogen was 17.2; the blood sugar, 119 mg. per hundred cubic centimeters. After a month's period of treatment, the signs of myocardial insufficiency disappeared, and the pulse rate fell to 80. October 9, the basal metabolic rate was +34 and +39; the pulse rate, 90.

CASE 4.—B. J., a housewife, aged 50, was admitted to Montefiore Hospital, June 5, 1922. Her father had died of apoplexy; her mother, of cancer. She had had malaria in childhood, and typhoid at the age of 15. The menses began at 13, and were always regular. The menopause occurred three months before admission. She married at 20, and was pregnant three times. Each time, abortion had to be induced because of severe vomiting. Six months after her marriage, weakness, loss in weight, palpitation and nervousness became apparent. These symptoms gradually abated after two years of medical treatment, and the patient became active socially, but only to a limited degree. Two years before admission, she was compelled to cease her activities because of weakness, palpitation, severe headaches, great nervousness and irritability. She also began to lose weight. A tonsillectomy was performed without relief of her symptoms. When she entered Montefiore Hospital, she complained of the aforementioned symptoms and of excessive perspiration.

The patient had poor nutrition. The skin was soft, smooth and moist. The eyes were slightly prominent, but the patient stated that they had always been so. The thyroid was slightly enlarged; there was no bruit. There were no adenomas. The carotids pulsated forcibly. The lungs were clear. The heart was uniformly enlarged, with a systolic murmur at the aortic orifice. The rate was 110; the rhythm, regular. The liver and spleen were not felt. The reflexes were exaggerated; there was no tremor of the fingers. Muscle power was weak. The radial arteries were somewhat thickened. The urine had a specific gravity of 1.014, with a trace of albumin, and no casts. The blood Wassermann reaction was negative. The blood urea was 19.8 per hundred cubic centimeters. The blood pressure was 220 systolic and 110 diastolic. The basal metabolic rate, June 6, was +18; the pulse rate, 100; June 27, +38; pulse rate, 110. The patient left the hospital after a short stay, and two weeks later died from cerebral hemorrhage.

CASE 5.—M. D., a housewife, aged 33, whose family and past history were unimportant and whose menstrual history was normal, had begun to complain of frequent headache, weakness, loss in weight and excessive perspiration five years before we saw her. During the following year, she received a course of roentgen-ray treatments to the thyroid gland, but with no relief. In May, 1920, a subtotal thyroidectomy was performed. For six months she felt better, although she did not regain any weight or strength. Then the symptoms returned, and indeed progressed. Another course of roentgen-ray treatment was of no avail. When seen in July, 1922, she complained of frequent headaches, loss in weight, weakness, palpitation and excessive sweating.

The patient was emaciated. There was no exophthalmos. The tonsils were enlarged, and the neck showed the scar of an operation. A small nodule of thyroid was palpable at the right upper pole. The carotid pulsation was prominent. The lungs were clear. The heart was uniformly enlarged, with a rate of 124, regular, and the aortic second sound was accentuated; there was a faint systolic murmur at the apex. The abdomen was normal. There was marked muscular weakness, and the reflexes were slightly exaggerated. The radial arteries were not thickened. The blood pressure was 160 systolic and 95 diastolic. There was a faint trace of albumin in the urine. The basal metabolic rate was +56; the pulse rate, 124.

COMMENT

Of the five patients, four were women, and in two of these symptoms of disease became manifest within a few months of the menopause. The ages of the patients were 45, 42, 37, 50 and 33. The duration of the illness varied from two to seven years in three of the cases, but in one case it had existed only six months. Every one of these patients was admitted to the hospital with the diagnosis of hypertension, and all their symptoms had been referred to a heightened blood pressure and its cardiovascular complications. Patient 2 probably has a chronic glomerulonephritis. In the first four cases the basal metabolism was measured because of the rapid pulse and nervous excitement of the patients, and we were astonished at the high readings that were obtained. Case 2 was discovered because of late we have been determining the basal metabolism of most of our patients with hypertension.

Patients with the syndrome we are discussing present a rather typical picture. Usually women, they are very thin, nervous, restless and emotional. Their skin is rather darkly pigmented, warm and moist. They present no exophthalmos, and the thyroid gland, although it may be palpable, has not the rich pulsatile vascularity of the thyroid in exophthalmic goiter. Tremor may or may not be present. When it exists, it is coarser than that so characteristic of exophthalmic goiter. Tachycardia is a very constant and important symptom.

Asthenia may or may not be present, and is never so extreme as is common in patients with exophthalmic goiter with an equivalent rise in heat production. The blood pressure is constantly elevated, and is associated with cardiac hypertrophy. Any other cardiovascular complications of hypertension may become manifest. The basal metabolic rate is distinctly elevated even when the circulation is sufficient.

Why may not the syndrome presented by these patients be diagnosed exophthalmic goiter? The blood pressure in patients with exophthalmic goiter takes the form of systolic hypertension. The systolic pressure is elevated, but the diastolic pressure is normal or low. The resultant pulse pressure is high, and the patients have all the earmarks of dilated peripheral arterioles, and a lessened peripheral resistance. These features of the arterial tension in exophthalmic goiter are well known and have been discussed by Willius, Boothby and Wilson,[3] Plummer,[4] Harris[5] and others. In fifty-five consecutive cases of frank exophthalmic goiter in persons ranging in age from 9 to 62 years, we found a systolic hypertension with the diastolic pressure within normal limits or low, with the exception of the cases discussed in this paper. We believe that the definite diastolic hypertension in itself is sufficient to distinguish these cases from frank exophthalmic goiter. In addition, the symptomatology is by no means typical of exophthalmic goiter. Furthermore, two of the patients who were subjected to thyroidectomy gained no relief from this procedure.

That the cases under discussion are not very rare is evidenced not alone from the circumstance that we have encountered five cases within the last year and a half, but also by the fact that not a few have been reported in the literature. They have been described as cases of exophthalmic goiter, however, or else the increased heat production has been mentioned only as an incident in the description of the case. Only one author, Foster,[6] has suggested that these patients may form a special group, which he, however, classes as "hyperthyroidism." Probably the first to describe these cases were Mougeot[7] and Lian.[8] They noted certain cases of hypertension with marked tachycardia. They, of course, did not measure the heat production, and interpreted the rapid heart rate as an early symptom of insufficiency of the left ventricle. In a paper on the basal metabolism in cardiac and renal diseases, Peabody, Meyer and Du Bois[9] record two cases that seem to fall within the group we are describing: one, a man, aged 51, with a blood pressure of 310 systolic and 160 diastolic, a pulse rate of 81, and basal metabolic rate of + 41; the other, a man, aged 54, with a blood pressure of 195 systolic and 110 diastolic, and a basal metabolic rate of + 28. Neither patient gave evidence of myocardial insufficiency. Aub and Du Bois[10] published the protocol of a woman, aged 39, with a blood pressure of 260 systolic and 170 diastolic, a pulse rate of 104, and a basal metabolic rate of + 27. They believed that she suffered from "hyperthyroidism."

Boothby and Sandiford[11] measured the basal metabolism of 170 patients with essential hypertension, and found that in 7.2 per cent. of the cases it ranged from + 16 to + 20, and in 3.4 per cent. above + 20. They make no further comment on these observations, but in a recent paper Boothby and Willius[12] state that patients with a high diastolic pressure are likely to have an elevation of metabolism. Dameshek[13] and Levine[14] each describe a case of marked hypertension associated with increased heat production, but they classify them as "hyperthyroidism."

Mannaberg[15] noted the frequency of tachycardia in patients with high blood pressure, and pointed out that this was much more common in women than in men, and that it persisted for years and was not influenced by vagus stimulation. Subsequently, he determined the basal metabolic rate in twenty patients with essential hypertension, and found it elevated from + 13.3 to + 54.9 per cent. in every case. He ascribed the phenomenon to a disorder of the ductless glands, particularly of the thyroid, but made the error of declaring that the heat production is increased in all patients with essential hypertension. More recently, Händel[16] found a basal metabolic rate above + 15 in eight of thirty cases of hypertension. His paper, however, is not very convincing, for five of the patients with increased heat production showed considerable dyspnea.

The ordinary patient with essential hypertension or with hypertension associated with chronic nephritis has a normal heat production. Boothby and Sandiford[11] found the basal metabolic rate between — 15 and + 15 in 89.4 per cent. of 170 cases of essential hypertension. Peabody[9] and Aub[10] noted no increased rates in patients with renal disease. We have recently determined the basal metabolic rate in five cases of uncomplicated hypertension and have found it normal.

There is as yet insufficient evidence to determine the nature of the syndrome which we have presented. Kisch,[17] who has also described some of these cases, attributes the increase in metabolism to the increased work of the hypertrophic heart. To us this explanation is hardly satisfying. It seems more likely that, in these patients, both the hypertension and the increased heat production are determined by disordered function of several of the endocrine glands, most probably the suprarenal and the thyroid. It is unlikely that the menopause, as such, is more than an exciting factor in the disorder, for Epstein and Lande[18] have shown that the menopause is associated with a normal metabolism.

SUMMARY

In five cases, diastolic hypertension with tachycardia, loss in weight, nervousness and increased basal metabolic rate were noted. We believe that they constitute a special syndrome which should be distinguished from the ordinary form of hypertension, as well as from exophthalmic goiter.

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THE INTRACUTANEOUS SALT SOLUTION TEST

PRELIMINARY REPORT OF A SIMPLE METHOD FOR DETERMINING THE EFFICIENCY OF THE CIRCULATION IN THE EXTREMITIES *

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In July, 1923, McClure and Aldrich [1] published a preliminary report of their observations on the time required for disappearance of intradermally injected salt solution. They determined that:

> If 0.2 c.c. of an 0.8 per cent. aqueous solution of sodium chlorid is injected intracutaneously in a normal child, a circumscribed snow-white elevation, in which the pores are accentuated, is immediately produced at the point of the injection. Although the extreme whiteness disappears in from one half to one minute, the elevation persists for a considerable time.

In normal children, the time required for complete disappearance of the wheal as determined by palpation was fifty minutes or more. In children with edema, there was a much more rapid disappearance of the wheal, the time being in some instances a minute or less. They concluded:

> The results so far obtained suggest that this test may be of value; first, in the detection of disturbed water balance in the tissue, and, secondly, as a means of following the progress of a case in which the presence of such a disturbance has been established.

In May, 1924, the same observers [2] reported a study of this test in sixteen cases in children of so-called "nephritis" with generalized edema. They noted that the disappearance time was shorter, the greater the edema, and vice versa, and that a reduction in the disappearance time preceded other clinical evidence of the edema by several days, and, conversely, that a lengthening of the disappearance time preceded a reduction in the edema. They noted a more rapid disappearance in the leg than in the arm, and attributed this to circulatory disturbances in the leg. They discussed at length the mechanism of this reaction, and concluded that the increased absorption of salt solution from the wheal was the result of an increased affinity of the tissues for water.

TABLE 1.—*Disappearance Time in Case 1 (Cardiac Decompensation)*

	Forearm, Minutes	Abdomen, Minutes	Shin, Minutes	Clinical Condition
10/26/24.....	27	35	2	General anasarca
10/31/24.....	40	57	20	Edema gone

Baker [3] tested seventy patients with scarlet fever and thirty patients with diphtheria, and concluded that the disappearance time was reduced, and that the reduction paralleled the severity of the intoxication.

If these reports are correct, intradermally injected salt solution should disappear much more rapidly in the legs than in the abdomen or arms in cases of cardiac edema. That this is actually the case is shown in Table 1.

The disappearance time was shortest in the leg, next shortest in the forearm, which, because of the sitting posture of the patient, was a dependent portion, and longest in the abdomen. As the edema lessened, the time was lengthened, but the same relative difference existed between the leg, arm and abdomen.

Table 2 shows a similar condition.

Careful consideration of a number of such cases led to an investigation of the use of this test to determine the adequacy of the arterial circulation in the extremities in cases of arterial disease associated with pain, vasomotor disturbances and even actual gangrene.

TABLE 2.—*Disappearance Time in Case 2 (Cardiac Decompensation)*

	Deltoid Region, Minutes	Abdomen, Minutes	Shin, Minutes	Clinical Condition
11/12/24....	50	35	12	Slight pitting of legs
11/19/24....	75	55	45	No pitting

Surgeons who are confronted with such cases usually advocate high and early amputation, because of the difficulty of establishing the exact state of the circulation, and because of the progressive nature of the vascular changes. At present the only available methods of determining the state of the circulation are the palpation of the available vessels, the use of the Pachon oscillometer, and the injection of bromid solution. The former method is grossly inaccurate, as only the superficial vessels can be examined, and frequently there is good collateral circulation around a completely plugged vessel. The oscillometer gives reasonably accurate results, but the apparatus is delicate and is easily broken; it is expensive, and requires specialized training for its use. At best it is also a measure only of the elasticity of the vessels, and gives no direct evidence of the oxygenation and nutrition of the tissues themselves. The visualization of the vessels by means of the injection of sodium bromid solutions, and roentgenograms, requires a surgical precedure that is not without danger in limbs with diseased vessels, and it also requires a very high degree of technical skill. This method also gives only indirect evidence of tissue nutrition.

It is quite evident that not one of these methods is very exact, and that a method which would combine accuracy with simplicity would have a large clinical application. To determine the accuracy of the salt solution test, the following types of experiments were performed:

EXPERIMENT 1.—The hair of a normal male rabbit was shaved from the legs below the knee joints. Under ether anesthesia, the femoral vessels were bared in Scarpa's triangle on the right side, and were clamped off *en masse* as close to Poupart's ligament as was possible. Anesthesia was then discontinued, and immediately 0.2 c.c. of 0.85 per cent. sodium chlorid solution was injected intracutaneously in each leg. Similar wheals were produced in each side. The wheal on the right side disappeared in forty-five minutes, that on the left side in sixty minutes. Two hours later, another injection was made in each leg with disappearance on the right side in thirty-five minutes, and on the left side in sixty minutes.

EXPERIMENT 2.—A female rabbit was prepared as in Experiment 1. Under ether anesthesia a very tight ligature was tied round the right thigh so as completely to occlude the vessels and to stop the circulation. The leg became blue, swollen and cold. Anesthesia was discontinued. One hour later, 0.2 c.c. of 0.85 per cent. sodium chlorid solution was injected as in the previous experiment. It disappeared in six minutes, fifty-four minutes faster than in normal rabbit

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legs. Anesthesia was then begun again, and the femoral vessels on the left side were ligated in Scarpa's triangle. The ligature was removed from the right side, and the animal was placed in its cage. Twenty hours later the test was repeated on both legs. Both legs had normal color and were warm. The animal was able to use them in locomotion. On the right side the wheal disappeared in ten minutes, and on the left side in twenty-five minutes.

These two experiments seemed to show that a marked disturbance of tissue affinity for water could be demonstrated, by means of this test, to follow disturbances in the minute volume of flow of arterial blood through an extremity.

The next step in our procedure was to determine the normal rate of the disappearance of the wheal in various portions of the legs of healthy persons. Accordingly, standard wheals were produced at two inch intervals beginning at the base of the great toe and extending up to the knee. Table 3 illustrates a normal finding.

TABLE 3.—*Disappearance Time in Case 3 (a Woman, Aged 25, with Optic Neuritis)*

	Right, Minutes	Left, Minutes
1	45	30
2	77	79
3	85	90
4	88	92
5	92	95
6	93	98
7	90	95

From a consideration of several normal tests, not less than thirty minutes at the base of the great toe and sixty minutes at the ankle is considered normal.

Records have been kept of a number of tests performed on patients with arterial disease in the extremities. The following illustrate characteristic findings:

CASE 4.—In a case of diabetes mellitus, hypertension, and gangrene of the left great toe, the left leg was amputated above the knee. The vessels were dissected out. There was no obliteration except in the area of gangrene. The small vessels of the foot were sclerosed but not obliterated. The oscillometer showed no oscillations at either ankle. There were normal oscillations above the ankle on the right side, and smaller ones below the knee on the left side. The left posterior tibial and dorsalis pedis arteries were not palpable.

CASE 5.—In a case of endarteritis obliterans, the right great toe was cyanotic, the other nails were blue, and the toe was cold. The right great toe was amputated. The vessels did not bleed. The right dorsalis pedis was not palpable. The oscillometer showed no oscillations at the ankle or calf on the right side, and diminished oscillations above the knee.

TABLE 4.—*Results of the Salt Solution Test in Case 4*

		Right, Minutes	Left, Minutes
Base of toe	1	15	5
	2	18	7
Ankle	3	66	30
	4	70	74
	5	95	98
	6	98	102
Knee	7	99	102

The left side showed no oscillations at the ankle, diminished at the calf, and normal above the knee.

CASE 6.—A man, aged 38, with an embolus in the left axillary artery, was given the first test four hours after the obstruction to the circulation. The operation consisted of amputation in the midforearm without flap. The stump became gangrenous, and the arm was reamputated above the elbow.

COMMENT

Cases 4 and 5 require little discussion. It is apparent that intradermally injected salt solution disappears more rapidly from areas with deficient circulation than from those areas in which the circulation is normal, in a manner comparable to the difference observed in different parts of the body in cases of cardiac disease.

TABLE 5.—*Results of the Salt Solution Test in Case 5*

		Right, Minutes	Left, Minutes	
Toe	1	15	49	A secondary operation was performed a few weeks later, the leg being amputated above the knee; both vessels were filled with clot
Ankle	2	28	59	
	3	35	61	
	4	34	53	
	5	34	65	
	6	40	72	
Knee	7	38	62	

Case 6, on casual observation, seems to refute these conclusions. Within four hours after the plugging of the axillary artery, there was a distinct diminution in the salt disappearance time in that part of the extremity which was cold and discolored. On the next day, twenty-four hours after the cessation of circulation, the disppearance time, instead of being lessened, was actually increased, and on the fifth day, it was still in normal limits in the gangrenous area. As a line of demarcation set in, it was found that, although the disappearance time remained high (seventy minutes) in the gangrenous area, immediately above this area it was markedly increased (six minutes) in the area of diminished circulation. In this case also, then, there

TABLE 6.—*Results of the Salt Solution Test in Case 6*

Date		Right Arm, Minutes	Left Arm, Minutes	
2/12/25	Wrist	76	16	Hand cold, bluish mottling to skin
		31	37	
		45	45	
	Elbow	60	70	
		65	75	
		75	75	
	Deltoid	75	75	
2/13/25	Wrist	45	75	Hand black, skin shriveling; discoloration extends 3 inches above wrist
		55	85	
		75	90	
	Elbow	90	95	
		90	100	
		90	100	
	Deltoid	90	100	
2/17/25	Back of hand	Not done	45	Dry gangrene of hand and forearm 1 inch above wrist
	Wrist	Not done	43	
		Not done	54	
		Not done	80	
	Elbow	Not done	91	
		Not done	92	
	Deltoid	Not done	95	
2/19/25	Back of hand	Not done	70	Dry gangrene of hand and forearm 1 inch above wrist
	Wrist at edge of gangrene	Not done	7	
		Not done	6	
		Not done	12	
	Elbow	Not done	51	
		Not done	65	
		Not done	65	
	Deltoid	Not done	65	

was a decreased disappearance time for intradermally injected salt solution in areas with deficient circulation for more than a few hours, but not in areas of actual gangrene.

CONCLUSIONS

1. The intradermal salt solution test is a rapid, accurate method of determining tissue affinity for water.

2. In circulatory disturbances associated with vascular disease, this test may afford a simple method of determining the level of adequate tissue oxygenation.

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CHOLECYSTOGRAPHY

APPEARANCE AND DISAPPEARANCE OF THE SHADOW *

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The physiologic processes involved in making the normal gallbladder opaque to the roentgen ray by the intravenous injection of various substances, first described by Graham and Cole,[1] hold great interest for the observer. In previous papers we [2] have shown that if a roentgen-ray picture of the gallbladder region of a normal subject is made three or four hours after the intravenous injection of sodium tetrabromphenolphthalein or tetra-iodophenolphthalein, a faint shadow of the gallbladder may be seen on the negative. At the expiration of eight hours after injection of the dye, the shadow will have increased in size and density. Twenty-four hours after injection, the gallbladder shadow is denser but somewhat smaller in size. Thirty-two hours after injection, if there is a shadow present, it will be still smaller in size and less dense. Thirty-six hours after injection of the dye, the shadow has usually disappeared. The contours of all the shadows are regular in outline.

We are now using sodium tetra-iodophenolphthalein for cholecystography,[3] since it may be used in smaller doses than tetrabromphenolphthalein. The action of tetra-iodophenolphthalein in vivo is analogous to that of tetrabromphenolphthalein.

It was known for some time that the bile in the gallbladder is normally thicker than the bile collected from the hepatic ducts. The total solids in the gallbladder may be as much as eight times that found in the ducts. It remained for Rous and McMaster,[4] however, to demonstrate conclusively the concentrating activity of the gallbladder. The explanation of the processes taking place during the cycle in which the gallbladder is opaque to the roentgen ray after the injection of tetra-iodophenolphthalein is based on this concentrating activity of that organ.

Bile, continuosly excreted by the liver, accumulates in the gallbladder during a fasting period, except for occasional small discharges through the papilla of Vater into the duodenum. The bile is prevented from entering the duodenum continuously by the sphincter of Oddi at the distal end of the common duct. During digestion there is a continuous intermittent discharge of bile into the duodenum. The presence of food in the stomach and the passage of chyme from the stomach into the duodenum increases the flow of bile from the papilla. The increased flow may be due to bile coming from the gallbladder, to an increased excretion of bile by the liver, or to both factors. The bile is permitted to enter the duodenum through a relaxed common duct sphincter. The amount of bile that enters the duodenum is largely dependent on the type of food that is ingested. The mechanism involved in the action of the sphincter and the gallbladder is said to be under the control of branches of the vagus and the sympathetic nerves. Not only is the relaxation of the common duct sphincter initiated by the passage of chyme from the stomach into the duodenum, but, as has been shown by Cole [5] in this laboratory, the gastric content influences the sphincteric action of the papilla of Vater.

These facts have been utilized to keep as much bile as possible pent up in the gallbladder for concentration by giving the injection of the dye while the stomach is fasting. Experimentally and clinically, the retention of the bile in the biliary tract by the sphincter of the common duct is necessary to secure good shadows of the gallbladder. Shadows of the gallbladder were not obtained in several dogs after injection of tetrabromphenolphthalein when the bile was collected from the distal portion of the common duct by means of a cannula and a rubber bag. The canalization of the common duct permitted a free outflow of bile from the liver.

Rous and McMaster found that a series of five emptied gallbladders, left to fill with bile from the liver, were able to concentrate the bulk of the bile on an average of 7.1 times in twenty-four hours. A series of seven gallbladders, left with their contents undisturbed, concentrated the bile coming to them 6.4 times in twenty-four hours. In some other experiments, the concentrating activity of the gallbladder was even greater. Their experiments were conducted on dogs by comparing the bile from the gallbladder with a portion of bile coming from another part of the liver which was not diverted into the gallbladder. They concluded that the concentration of the content of the gallbladder is accomplished by the withdrawal of fluid by osmosis and diffusion. The lymphatics of the wall of the gallbladder probably play a large part in the absorption. The concentration of the bile in the gallbladder tends to approach the osmotic pressure of the blood.

The liver begins to remove tetrabromphenolphthalein or tetra-iodophenolphthalein from the blood stream soon after intravenous injection. Pelkan and Whipple [6] have concluded that phenol conjugation is an exclusive function of the liver parenchyma cells. This function may explain the selective action of the liver for the dyes containing phenol molecules. Bromin is found in the bile very soon after injection of tetrabromphenolphthalein. The bile-containing bromin is diverted into the gallbladder and concentrated there. Four hours after injection of sodium tetrabromphenolphthalein there is normally sufficient concentration of bromin to be opaque to the roentgen ray. The shadows of maximum density are reached from sixteen to twenty-four hours after injection. This corresponds to the observation of Rous and McMaster that the concentration of the bile is no greater in the gallbladder at the end of forty-eight hours than after a period of from sixteen to twenty-four hours.

After injection of tetrabromphenolphthalein, analysis [7] of bile that had not entered the gallbladder showed an average concentration of 0.2 per cent. of bromin. Analysis of bile contained in gallbladders that cast

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shadows of maximum density showed an average concentration of 0.6 per cent. of bromin. These results clearly show the concentrating activity of the gallbladder. Analyses show that there is a fairly constant rate of excretion of bromin in the bile and that the output of bromin is independent of the rate of excretion of bile. As much as 97 per cent. of the total amount of bromin that has been injected intravenously in the form of tetrabromphenolphthalein has been recovered from the bile.

There is no evidence that tetrabromphenolphthalein is secreted by the wall of the gallbladder. Gallbladders have been emptied after laparotomy by manual expression of their content, and the cystic duct has been ligated. The cystic artery and vein were not included in the ligature. Tetrabromphenolphthalein was given, and at the end of twenty-four hours there were no shadows of the gallbladder produced by exposure to the roentgen ray. There was found at necropsy a few cubic centimeters of thick mucus in the gallbladder which did not contain bromin. Similar experiments were carried out in which the blood vessels were ligated in addition to the cystic ducts. Obviously, the bromin must enter the gallbladder through the cystic duct.

The extrahepatic ducts have not cast shadows in animals because, normally at least, they probably do not possess a concentrating activity and because they are small. Rous and McMaster are of the opinion that the bile ducts not only do not concentrate their content but actually dilute the bile with a thin secretion of their own. The extrahepatic ducts of the dog and rabbits do not cast a shadow after the ligation of the common duct and injection of tetrabromphenolphthalein, nor is the shadow of the liver made denser by the injection.

The physiologic processes involved in the disappearance of the roentgen-ray shadow produced by the gallbladder after injection of sodium tetrabromphenolphthalein is of particularly great interest because they shed some light on the normal method by which the gallbladder empties. It is believed by some that anything which enters the gallbladder does not pass out by way of the cystic duct. Sweet,[8] in 1924, said: "The position of the gallbladder, the provision of two valvular structures at its outlet, which are mechanically designed to permit inflow and to hinder outflow, lead me to the conclusion that under normal conditions whatever passes into the gallbladder through the cystic duct never passes out again through the cystic duct." Other workers are convinced that the gallbladder does normally empty through the cystic duct.

Obviously, there are three routes by which the bromin that produces the shadow may leave the gallbladder: (1) It may pass out of the cystic duct; (2) it may pass through the wall of the gallbladder by osmosis and diffusion, being absorbed by the blood vessels or lymphatics, or (3) it may leave by a combination of the two routes. It has been found by the following type of experiment that by far the greater portion of the bromin leaves the gallbladder, as it entered, through the cystic duct. Dense shadows of the gallbladder were first obtained in dogs by the intravenous injection of sodium tetrabromphenolphthalein, and the common duct instead of the cystic duct was ligated because ligation of the cystic duct necessarily occludes the large lymphatic trunks draining the gallbladder. The shadows of the gallbladders persisted until the death of the animals or the reestablishment of an opening of the common duct. The final roentgen-ray shadows of the gallbladders were nearly as dense as the first ones made. One dog lived eleven days after such a procedure. The shadow was still quite dense at the expiration of that time. These experiments can be interpreted only as showing that the gallbladder normally empties itself through the cystic duct rather than through absorption, at least so far as the emptying of tetrabromphenolphthalein is concerned.

A small portion of the bromin may make its exit through the wall of the gallbladder. This opinion is based largely on inference. Bile salts and pigments have been found in the lymph collected from the lymphatics of the gallbladder by canalization. Salts that are not normally found in the gallbladder may be introduced into the gallbladder and then be collected from the lymphatics draining the gallbladder. Phenoltetrahalogenphthaleins may be demonstrated in the lymphatics emerging from the gallbladder after ligation of the common duct and intravenous injection of the dyes. Further evidence that a portion of the bromin may pass through the wall is supported by the previously demonstrated absorptive function of the gallbladder.

The mechanism of the passage of the halogens contained in the derivatives of phenolphthalein from the gallbladder through the cystic duct will form the basis of another publication.

SUMMARY

Bromin and iodin are excreted in the bile after the intravenous injection of sodium tetrabromphenolphthalein or tetra-iodophenolphthalein. During a fasting period, the bromin or iodin enters the gallbladder through the cystic duct and is sufficiently concentrated there to make the gallbladder opaque to the roentgen ray for a period of from thirty to thirty-five hours. The concentration of the bromin or iodin is normally dependent on the retention of the bile in the gallbladder by the sphincter of the common duct. The maximum concentration of the bromin or iodin is reached in from sixteen to twenty-four hours after injection. The average concentration of bromin in the gallbladder when it casts a shadow of maximum density is 0.6 per cent. The average bromin content of bile that has not entered the gallbladder is 0.2 per cent. The greater portion of the bromin in the gallbladder which produces a shadow of that organ after intravenous injection of tetrabromphenolphthalein leaves the gallbladder through the cystic duct.

CONCLUSIONS

1. The gallbladder has a concentrating activity.
2. The retention of bile for concentration of bromin in the gallbladder is largely dependent on the sphincter of the common duct.
3. A maximum concentration of bromin in the gallbladder is reached after from sixteen to twenty-four hours.
4. The gallbladder fills and empties with bromin during a period of from thirty to forty hours after intravenous injection of sodium tetrabromphenolphthalein.
5. The greater portion of the bromin that enters the gallbladder through the cystic duct passes out through the cystic duct.

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Acidosis.—It is time for us to throw off an error of thirty years' standing in regard to "acidosis." Whatever this condition is, it certainly is not merely acid poisoning.—Yandell Henderson.

VARIATIONS IN THE ACIDITY OF DIFFERENT PARTS OF THE GASTRIC RESIDUUM *

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A great deal of discussion concerning the value of fractional gastric analysis has taken place since Gorham [1] pointed out that the publications of many physiologists tended to show variations in the acidity of different parts of the stomach, and that such variations could be conclusively demonstrated if a test meal was given, the stomach rapidly emptied, and the acid content of successive specimens determined. His experiments have been confirmed by Wheelon,[2] who carried out similar experiments on normal subjects; by Kopeloff,[3] who not only carried out experiments similar to those of Gorham, but also determined the acidity of specimens aspirated simultaneously through three tubes in different parts of the stomach; by White;[4] by Lockwood and Jacobson,[5] and by Friedenwald, Gantt and Morrison.[6]

The results of these studies, with the exception of a few determinations discussed but not presented in detail by Lockwood and Jacobson,[5] have been based on analyses of gastric juice obtained after meals. It has seemed worth while to present a short series of consecutive cases in which the gastric residuum was obtained and analyzed in a somewhat similar way, for, in material of this kind, some of the difficulties encountered in interpreting the results of Gorham are reduced. Rehfuss,[7] for example, has argued that failure to obtain a homogeneous mixture of the gastric contents takes place only in a limited number of subjects. If marked differences are found in the acid concentration in the residuum, when the rate of hydrochloric acid secretion has been at least relatively constant for some time, it seems as though added weight must be given to the observations of Gorham and the other workers who have confirmed his observations.

The results presented here were obtained in the following way: Each patient swallowed the small stomach tube, and, as soon as the operator was sure that the tip was in the stomach, fractions were immediately removed as follows: First, with the patient in the sitting position, as much material as possible was withdrawn; then, with the patient lying on his right side, another specimen was taken which again contained as much fluid as could be evacuated; the procedure was repeated with the patient on his left side and, lastly, on his back. This gave a total of four specimens for study, except in those cases, and they were fairly numerous, in which either the stomach was completely emptied before all specimens were obtained, or in which the tube became clogged. A test meal was then given, and a fractional analysis carried out. One cubic centimeter of each of the specimens was titrated with hundredth normal alkali to the end-points with Töpfer's reagent and with phenolphthalein. The results are reported in terms of cubic centimeters of tenth normal acid to each hundred cubic centimeters of gastric juice.[8]

The results in all cases studied, except one in which material was obtained only when the patient was in the sitting posture, are given in the accompanying table. It will be seen that, while the results show more constancy than do some of those obtained after a test meal had been given, still in many cases there were marked variations in the concentration of hydrochloric acid in the different fractions. The maximum difference was 43 c.c. of tenth normal hydrochloric acid per hundred cubic centimeters, a figure much larger than any reported in the residuum by Lockwood and Jacobson.[5] In fact, in eight cases, or about 30 per cent. of all studied, the differences found were greater than the maximum (13 c.c.) reported by them. The differences were smaller when acid concentrations were low, a condition reported by various observers who have carried out similar studies after test meals; but in only six of the seventeen cases in which hydrochloric acid was absent in one specimen was it absent from all. One of these six showed an absence of hydrochloric acid in a complete fractional test, but in the others it was found after the meal had been given. There do not appear to have been any significant resemblances or differences with the patients in different positions. As far as can be determined, the presence or absence of sufficient bile to color the specimens did not affect the results. The table shows that in the residuum, as well as in specimens obtained after meals, the amount of acid found in one specimen, drawn in the usual way, is not representative of that present in all parts of the stomach. If acid concentrations are found to be low, they probably represent general conditions more accurately then when they are high; but even if no hydro-

Results of Observations

Number	Sitting		On Right Side		On Left Side		On Back	
	HCl	Total	HCl	Total	HCl	Total	HCl	Total
1	0	7	0*	5	0**	6	0*	7
2	0	20	0	2	0	7	0	7
3	0*	8	0	9	0*	9	..	..
4	0	19	0	16	0	15	..	..
5	0	0	0	18	..	..	..	..
6	0	2	0	3	..	..	..	..
7	0	5	0	4	0**	13	2**	13
8	0	12	0	12	0	18	7	26
9	0	9	0	7	0	14	10	26
10	0**	11	1**	15	..	..	..	..
11	0	14	5	20	..	..	..	..
12	0	4	0	5	4	14	4	24
13	15	20	2	10	0	10	0	11
14	10*	21	5	22	0	5	0	7
15	16**	27	2**	18	0**	15	2*	17
16	9*	24	12	29	15	34	0	13
17	0	14	22	35	43	58	24	34
18	3**	12	9**	38	..	..	..	..
19	5	42	20	55	20	54	..	..
20	9	17	8	15	8	20	..	..
21	23	41	10	15	12	30	10	34
22	12	25	22	38	18	31	..	..
23	40	60	27	36	20	44	27	45
24	38	55	33	53	21	47	..	..
25	26	66	44	97	29	107	..	..
26	35	52	47	63	27	55	53	65

In determinations marked * there was bile. When one asterisk is used the presence of bile was questionable; where bile was certainly present, two have been used. Case 1 showed no acid in the gastric juice throughout the fractional test.

* From the Clifton Springs Sanitarium and Clinic.

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chloric acid is found in one specimen, it cannot be assumed that the acid is not present elsewhere.

While the results given above tend to support the criticisms of fractional analysis that have recently been advanced, there are certain facts that must be borne in mind. As recently pointed out by Rehfuss [7] and by Eggleston,[9] the use of the fractional method has been of much service in the study of gastric disease. Furthermore, the results of fractional analyses have been confirmed in some instances by other tests, as by the study of the alveolar carbon dioxid concentration after meals [10] and to a limited extent by the study of the alkaline tide in urine.[11] The results do show that values obtained in routine gastric tests carried out in the usual manner should not be accepted as final. Duplicate studies should be sought in as many cases as possible, especially in those in which the results do not correspond with the ones which the physician expects from the clinical findings.

EMBOLECTOMY

SUCCESSFUL REMOVAL OF EMBOLUS FROM FIRST PART OF SUBCLAVIAN ARTERY *

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AND
A. A. HOYER, M.D.
RANDOLPH, WIS.

Binnie,[1] in pointing out the difference between an embolus lodged in an otherwise more or less healthy artery and a thrombus formed in a segment of an injured or diseased vessel, says in regard to the latter:

> Removal of the blood clot alone is valueless, as another clot will form immediately. But when the closure of the artery is due to the lodgment of an embolus, it is logical to open the vessel by a longitudinal incision after providing for temporary hemostasis, extract the clot, clean the interior of the vessel, smear with sterile petrolatum and close the wound with sutures.

ANATOMY OF THE LEFT SUBCLAVIAN REGION

The left subclavian artery,[2] arising from the end of the aortic arch, ascends vertically to the inner margin of the scalenus anticus muscle. The first part is much longer than its fellow on the right and passes upward instead of arching outward, and ends at the inner border of the scalenus anticus muscle. At this point four large branches are given off within a distance of about three-fourths inch (20 mm.), these vessels being the vertebral, thyroid axis, internal mammary and superior intercostal. The artery now becomes smaller and passes between the attachments of the scalenus anticus and scalenus medius to the inner and upper border of the first rib. This portion of the vessel is half an inch (13 mm.) long, and is the highest point of the arch of the vessel. The third portion extends from this point to the outer border of the first rib, where it becomes the axillary artery.

The right subclavian arises from the innominate artery, and its highest point is half an inch above the clavicle. The left subclavian artery lies much more deeply, the highest portion of which is often half an inch below the clavicle. It must be borne in mind that the posterior border of the sternomastoid corresponds to the anterior inner border of the scalenus anticus.

The collateral circulation [3] of the first part of the subclavian artery is carried on by (1) the superior and inferior thyroids; (2) the two vertebrals; (3) the internal mammary with the deep epigastric and aortic intercostals; (4) the superior intercostal with the aortic intercostal; (5) the profunda cervicis with the princeps cervicis; (6) the scapula branches of the thyroid axis with the branches of the axillary, and (7) the thoracic branches of the axillary with the aortic intercostals.

RESULTS OF EMBOLECTOMY

Key [4] had compiled forty-five cases of embolism, involving various arteries, previous to March, 1922. Embolectomies had been done in all, and thirteen were successful. Of twelve operations done within ten hours of the onset, five were successful. Of five operations done between ten and fifteen hours of the onset, two were successful. Of four done within twenty hours of the onset, one was successful, and of three done within twenty-four hours of the onset, one was successful.

Since March, 1922, and up to September, 1924, we have collected reports of eight additional cases [5] in which embolectomies had been done with favorable outcome in six cases, making a total of fifty-three cases, nineteen of which were successful. To these, we add our case, which, so far as we have been able to ascertain from a careful perusal of the literature, is the only successful embolectomy of the first or second part of the subclavian artery.

REPORT OF CASE

A woman, aged 62, seen, June 12, 1924, had two weeks previously had what appeared to be an empyema of the gall-bladder. This subsided, and a few days later she developed a sudden, severe pain in the left chest, with symptoms of pleurisy, rise of temperature to 101, and a pulse of 120. She expectorated bright red blood. The diagnosis of lung infarct was made. Suddenly, at 9 a. m., June 12, five hours before operation, she developed a "needle and pin" paresthesia of the left hand and arm. It rapidly became numb, and she noticed that it was completely blanched, and that no pulse could be felt in the arm. We saw her at 1 p. m., at which time there was no pulsation to be felt in the radial or brachial arteries. A weak pulsation could be felt high in the axilla. The arm was absolutely ischemic, cold and paretic. A diagnosis of embolism of the first portion of the axillary artery was made. There was a question whether the axillary pulsation was a true arterial pulsation or one transmitted from the vein.

An incision 3½ inches (9 cm.) long was made at the apex of the axilla, the arm being elevated as much as possible. The axillary artery and upper portion of brachial arteries were readily isolated and found to be filled with a putty-like thrombus. A palpating finger was passed upward along the axillary vessels as far as the third portion of the subclavian artery. No pulsation could be felt in the artery. It could be determined easily that the artery was completely occluded by a thrombus. In order to determine the point of election for placing the second incision so that the artery could be most

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2. Gray: Anatomy, 1907, p. 633.
3. Gray: Anatomy, 1907, p. 636.
4. Key, E.: Acta chir. Scandinav. **54**: 339 (Jan.) 1922.
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easily reached, a palpating finger was passed along the axillary artery to the third portion of the subclavian artery, which could be brought to the surface below the clavicle with far more ease than above the clavicle, the patient's arm being in an outstretched position. An incision 4 inches (10 cm.) long was then made half an inch below and parallel to the middle third of the clavicle, so that the artery which was the third

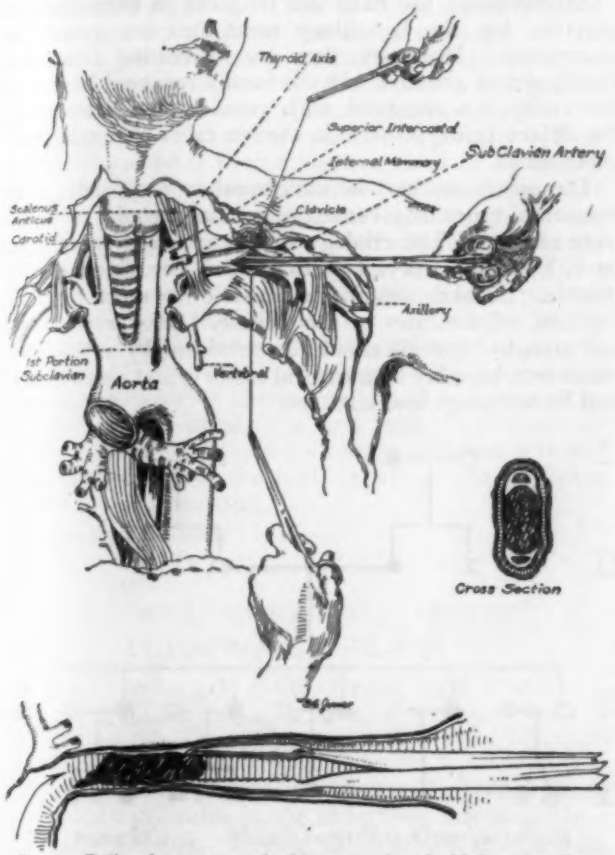


Fig. 1.—Bullet forceps passed along second and third parts of subclavian artery and engaging embolus lodged at junction of first and second parts; silk ligatures holding edges of incision open. The cross-section shows jaws of artery forceps holding upper and lower borders of artery in shape of an oval, bringing lateral walls in close apposition to clot and holding it securely. At bottom, embolus with arterial pressure behind clot.

portion of the subclavian could be brought to the surface and thoroughly visualized. A palpating finger was now passed along the under surface of the artery, and the thrombus could be felt as far as the inner border of the scalenus anticus muscle. Beyond this point, the tip of the palpating finger could distinguish a distinct pulsation. The vessel was held in the incision by soft rubber tubes. An incision half an inch long was now placed in the artery, beginning at the junction with the axillary artery and extending toward the aorta. When the vessel walls were opened, a large black clot, one-fourth inch (7 mm.) in diameter, could be seen. A piece of thrombus about 2 inches (5 cm.) long was removed, and the remainder, extending from the first part of the subclavian artery through the axillary and brachial arteries to the elbow, was milked out in a retrograde manner. This clot formation extended as far as the antecubital fossa, and after all was removed, nonclotted blood could be expressed by massage of the forearm and milking the upper arm toward the opening in the vessel.

It was now decided to attempt removal of the embolus, which had lodged at the angulation of the first and second parts of the subclavian artery and where the vertebral, superior intercostal, internal mammary and thyroid axis vessels are given off. The edge of the arterial wound was retracted by silk ligatures, small forceps were passed carefully down the lumen, and pieces of thrombi about 2 inches long were removed. Small 8 inch (20 cm.) bullet forceps were now passed up the artery for a distance of 4 inches. Holding the blades open so that the jaws of the forceps would retract the walls of the vessel from the clot as they were passed inward and applied to the embolus, not unlike obstetric forceps, we made gentle traction on the forceps, and a clot 1½ inches (40 mm.) long, with prolongations that had extended into the bifurcating vessels, was extracted and a gush of bright red arterial blood followed. The vessel was now closed, fine silk being used, with a reverse Connell mattress suture, in such manner as to bring intima to intima, and a second over-and-over suture to prevent leakage. Pulsation could be felt immediately as far as the antecubital fossa, but the radial pulse did not become palpable for several days.

The patient developed quite a severe infection about the upper wound, which responded to treatment and healed nicely. At present, six months after operation, the patient is in perfect health. She has no sensory or motor derangements in the left arm. She is able to use her hand and arm freely, milking several cows morning and night. She has no numbness or paresthesia. The hand is warm and does not get cold more easily than the other. On examination, the antecubital pulsation can be felt slightly. The radial pulse is not palpable, although the capillary pulsation beneath the finger nails is normal. The hand is warm. Blood pressure readings cannot be made out either by palpation or by auscultation of the artery, although the capillary pulsation returns tardily after the mercury reaches 145 mm. which is the same point at which the systolic reading is made in the right arm.

COMMENT

The points in this case to which we wish to call attention are:

1. The visible and palpable axillary pulsation that was present at examination we found, on opening the axilla, to be a marked venous pulsation of the axillary vein.

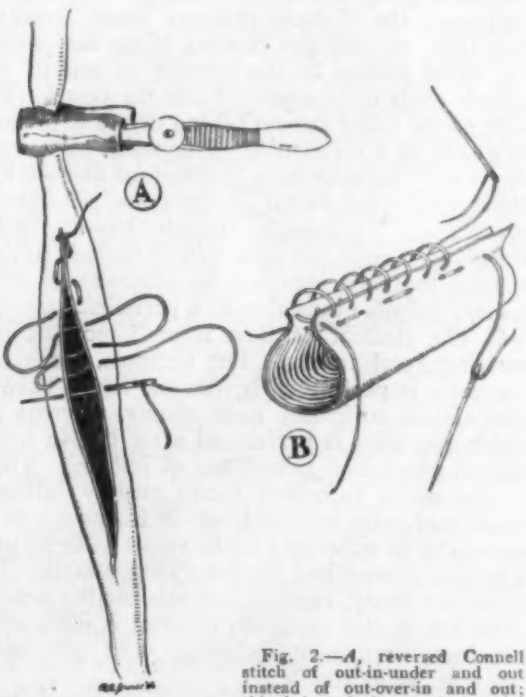


Fig. 2.—*A*, reversed Connell stitch of out-in-under and out instead of out-over-in and out; this brings intima to intima instead of serosa to serosa as in stomach and intestinal work. *B*, cross-section of artery after reversed Connell stitch has been placed. A continuous over-and-over suture tacking edges together to prevent leakage and clot formation.

2. The mistake that we made in placing our first incision was a life saver; for, through this incision, we were able to determine that it is possible to bring the subclavian artery to the surface with much greater ease below the clavicle, even as far as the first portion, with the arm extended, than to reach the same artery with

a supraclavicular incision, no matter in what position the arm is placed.

3. Because of this incision, we were able to milk out the thrombus from the entire length of the brachial artery by actual massage of the axillary artery, together with external manipulation, until dark blood, free from clots, could be expressed freely in a retrograde manner.

4. The thrombus that had formed in the second and third parts of the subclavian, axillary and brachial arteries was due to the stagnation of blood in the vessels below the embolus, which acted not unlike the cork in a bottle, and tended to produce a vacuum. This, with the venous blood pressure ahead, accounts for the formation of the thrombus.

5. Collateral circulation, which will develop perfectly following ligation of the subclavian, axillary or brachial artery at any one location, cannot take place when a thrombus extending from the subclavian to the lower end of the brachial artery blocks all the anastomosing arteries that go to make up the collateral circulation about the shoulder joint.

6. It is the sudden, complete occlusion of the vessel, with immediate block of the arterial flow, which leaves the arteries filled with blood that produces the thrombi and causes the ischemic gangrene, whereas an incomplete occlusion allows the vessels to accommodate themselves to the physiologic changes, and, in this instance, collateral circulation sufficient to prevent gangrene usually develops.

7. We believe that the site of lodgment of the embolus, whether in the upper or in the lower extremity, depends on the phase of respiration present; for example, during inspiration, the intra-abdominal pressure is increased, the thoracic pressure being decreased. At this time, an embolus passing along the periphery of the blood stream by the opening of one of the large vessels tends to be aspirated into the vessel. The pressure of the blood stream behind drives it forward until lodgment at a bifurcation of or point of narrowing in the vessel. In suturing a longitudinal incision in a large blood vessel, the lumen at this point is markedly narrowed; and, although enough blood reaches the extremity beyond for purposes of normal function, the arterial pressure may not be sufficient to produce a distinct palpable pulsation in a peripheral artery.

8. The element of time is an important factor in securing good results. For example, cases in which operation is performed before six hours have elapsed give almost uniformly good results, whereas those in which operation is performed after twelve hours have elapsed give a high percentage of failures. The reason is obvious: a thrombus forms rapidly following the insult, and after several hours it is difficult to remove because of its adherence to the vessel walls by prolongations that extend into the branching vessels. The condition, no doubt, reaches into the smaller arteries and arterioles, so that complete removal is impossible, and, therefore, permanent ischemia, with cell death and gangrene, is inevitable.

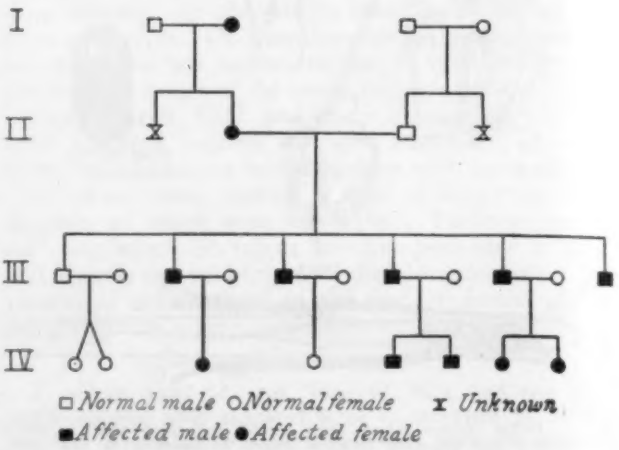
World Prevalence of Disease.—Health conditions throughout the world seem not to have been disturbed by any unusual or special epidemic prevalence during the months of October and November, 1924, judging by data made available in the December number of the epidemiologic report issued by the Health Section of the League of Nations' secretariat. Mortality from all causes in a number of large cities scattered over the world showed some seasonal increases, but agreed very closely with the corresponding periods of 1923.—*Pub. Health Rep.* **40**:248 (Feb. 6) 1925.

HEREDITARY FAMILIAL DYSTROPHY OF THE NAILS

NORMAN TOBIAS, M.D.
ST. LOUIS

Affections of the nails are frequent in dermatologic practice, but the hereditary conditions are relatively uncommon. Moreover, they are interesting from the standpoint of genetics. In the family reported here, the deformity has occurred with considerable frequency, the defect being present in twelve cases through four generations.

The onychoses may be congenital or acquired. The congenital types may consist of partial atrophy or complete absence. The etiology of the acquired types may be (*a*) inflammatory, (*b*) toxic, (*c*) parasitic or (*d*) trophic. Local causes are responsible for more than 50 per cent. of the cases of the disease. In every case of nail atrophy, syphilis should be ruled out by a Wassermann test, heredity by a careful history, and tinea infection by scrapings and cultures.



Hereditary dystrophy of nails in four generations.

Congenital dystrophy of the nails may be limited to the fingers or toes, or may involve both and may be apparent at birth, or appear at puberty or later. Clinically, the disturbances of nail growth and nutrition give rise to a varied picture, from complete absence to thinning, thickening, irregular growth, splitting, discoloration, elevation or distortion from subungual hyperkeratosis.

Anomalies of other epidermal structures may coexist in these cases. Among these may be cutaneous manifestations, such as ichthyosis, epidermolysis bullosa and keratosis palmaris; hair affections, such as hypertrichosis and alopecia; and involvement of the teeth with premature or abnormally late eruption.

The association of dystrophy of the hair and nails with hypothyroidism has been observed by Barrett,[1] who reported fourteen cases in six generations. Inherited differences in the glands of internal secretion may be responsible for a whole series of changes in the growth and nutrition of certain tissues, and must be taken into consideration as having an important bearing on the study of heredity.

In two of our cases observed in the third and fourth generations, the nails of the fingers became involved

1. Barrett, A. M.: Hereditary Occurrence of Hypothyroidism with Dystrophies of the Nails and Hair, Arch. Neurol. & Psychiat. **2**: 628 (Dec.) 1919.

early in life. The thumb nails were practically absent, being replaced by rough hyperkeratotic tissue. The other nails bore longitudinal fissures and were split at the ends. The skin under the free border of the nails was considerably thickened and verrucous. The Wassermann reaction and examination of the scrapings of the tinea were negative. Physical examination revealed no other abnormalities in the cases studied. In the course of a routine history, careful inquiry revealed the fact that there were several other cases in the family, and formed the basis for the accompanying chart.

In this study, comprising twenty-five persons in four generations, at least twelve positive cases of dystrophy of the nails have been determined. The disease has appeared in each generation, the defect having been handed down from parent to child through direct transmission by the mechanism of simplex inheritance, the offspring receiving a single or simplex dose of positive determiners from the affected parent. In spite of the small size of the families in the second and fourth generations, the defect definitely appears to be a mendelian dominant or positive characteristic and is inherited by the affected individual as a new trait. Dominant or positive types of a disease are relatively common in any given family, since one half or all of the offspring commonly show the trait.

Metropolitan Building.

A TREATMENT FOR WHITE PHOSPHORUS BURNS *

DUNCAN C. WALTON, M.D.
Lieutenant Commander, M. C., U. S. Navy
EDGEWOOD, MD.

Although white phosphorus has largely been replaced by various substitutes in the industries, this is not true in military practice. During the World War enormous quantities of white phosphorus were used on both sides, as a smoke screen producer, as an incendiary agent, and above all for its burning and terrorizing effect on hostile troops, when used in Stokes mortar shells, Livens projectors and hand grenades. The American production of white phosphorus for war purposes had reached the enormous figure of 1,006 tons at the time of the armistice. While the recent gas treaty prohibits the use of chemical agents such as the toxic smokes and lethal war gases, this prohibition does not cover the use of nontoxic smoke producers, and white phosphorus is still a permitted war agent. In consequence it is widely used in troop maneuvers, and a number of serious accidents have occurred, both in filling plants and in the field, as a result of premature bursts of grenades and shells.

Great difficulty has been experienced in treating these cases, owing to the fact that the phosphorus adhered to the flesh, where it continued to fume and occasionally burst into flame again. This necessitated the placing of such cases in a continuous bath, and immediately on removal from the bath the phosphorus would begin to fume and smolder again.

The following methods of treatment were considered:

1. To use a phosphorus solvent containing some neutralizing agent. This method at first glance appears to be the ideal one, but the only satisfactory solvent for phosphorus, carbon disulphid, is itself highly toxic. The same objections apply in less degree to the other solvents; also, they would be highly painful on a burned area. The possibility of the neutralizing agent not acting immediately on the dissolved phosphorus has also to be considered, as the burned area would rapidly absorb the dissolved phosphorus, and acute phosphorus poisoning would inevitably result.

2. To use oxidizing agents that would rapidly oxidize the phosphorus. This idea was abandoned, since either the reaction would proceed so slowly as to necessitate long applications of the chemicals, or, if stronger reagents were used, the reaction would proceed with such violence as to cause further tissue damage, and in addition any reagents capable of acting rapidly would be too irritant in themselves.

3. To use agents that would rapidly place an insoluble, inert, nontoxic coating on any particles of phosphorus present, such particles to be later removed by irrigation with some nonirritant such as physiologic sodium chlorid solution.

A number of experiments were performed on phosphorus in vitro, using solutions of nontoxic chemicals, and it was found that copper sulphate acted the most rapidly. Copper sulphate has long been used as an antidote for phosphorus poisoning, coating the ingested phosphorus with a layer of insoluble and nontoxic copper phosphid and acting as an emetic. A lump of phosphorus dropped in a 1 per cent. solution of copper sulphate is immediately turned black, and no longer fumes when exposed to the air.

Copper sulphate is used in medicine for a number of purposes. Solid sticks are used in the treatment of trachoma, a disease of the eyes. Solutions of various strengths and also copper sulphate pastes have occasionally been used as local applications to stimulate indolent ulcers. Bevan[1] has used copper sulphate successfully in actinomycosis. He gave from 1 to 3 grains (0.065 to 0.2 gm.) daily internally, and applied a 1 per cent. solution to the ulcerated area. Cushny states that a 1 per cent. solution is occasionally used as a lotion in wounds, and that it is much less dangerous to man than many other remedies used as parasiticides and disinfectants. Sollmann states that its toxicity to animals is low. Experiments on mice showed us that the toxicity of a 2 per cent. solution of copper sulphate for mice by subcutaneous injection was 625 milligrams per kilogram.

The following experiments on animals were then performed: Areas were shaved on two guinea-pigs; the pigs were then morphinized, and anesthetized with chloroform. Lumps of phosphorus were placed on their skin and ignited. The flames were then quenched with water, but the phosphorus continued to fume. "Milk of Magnesia" had no effect on the phosphorus, which continued to fume. A 1 per cent. solution of copper sulphate was then applied, and the fuming immediately ceased, the phosphorus having a heavy black film of copper phosphid on its surface.

A small black dog with abdomen shaved was morphinized and then anesthetized with chloroform. Lumps of phosphorus the size of a pea were applied to the skin and ignited. Cotton pads soaked in water were applied, and the flames extinguished. The phosphorus remaining fumed markedly. A pad of 3 per cent. copper sulphate was applied for two minutes. Fuming ceased, and the phosphorus lumps were black.

The foregoing experiment was repeated with 1 per cent. copper sulphate with the same favorable results.

* From the Medical Research Division, Edgewood Arsenal.

1. Bevan: Semaine méd., 1905, p. 558.

Gashes were then cut in the skin and phosphorus inserted to simulate the results of a wound from a white phosphorus hand grenade or shell. Both the 3 per cent. and 1 per cent. copper sulphate solutions at once stopped the fuming from the depths of the wounds.

Large lumps of phosphorus were then placed in the wounds, ignited and permitted to burn, till the phosphorus was thoroughly heated and melted. Plain water pads when applied stopped the flames, but immediately on their removal the phosphorus burst into flame again. This experiment was repeated several times, pads being soaked with either a 3 per cent. or a 1 per cent. copper sulphate solution. The flames were at once quenched, the phosphorus did not reignite, and no fuming occurred. The phosphorus lumps were heavily copper plated and easily washed or lifted from the underlying tissues.

Several times during the course of the experiments, I accidentally let phosphorus come in contact with my hands. The result was a very disagreeable itching and burning sensation, and the area affected smelled strongly of phosphorus. A single brief application, one-half minute, of 1 per cent. copper sulphate solution at once relieved the burning sensation, and destroyed the odor of phosphorus.

CONCLUSIONS

As the result of these experiments, a 1 per cent. copper sulphate solution is recommended as a treatment for white phosphorus burns, and a 1 per cent. solution of copper sulphate should be kept on hand at all shell and grenade filling stations, at Stoke's mortar batteries when white phosphorus shells are being used, and at first aid stations. Large pads of absorbent cotton should also be at hand. Whenever a phosphorus burn is received, a large sponge of absorbent cotton should be saturated with a 1 per cent. copper sulphate solution, and applied to the burning phosphorus. Within two or three minutes, it will be possible to remove the sponge. The copper-coated phosphorus should then be removed by forceps or by irrigation, and the case then treated like any other burn.

Clinical Notes, Suggestions and New Instruments

A NEW METHOD OF PREPARING DELBET SPLINTS*

James E. Winter, M.D., Louisville, Ky.

The Delbet splint for fractures of the ankle and lower part of the leg is very efficient, but has the disadvantage of being rather uncertain in setting, in the hands of many users. This is enough of a handicap to prevent its being used to any degree outside of hospital practice.

In order to obviate this uncertainty we have altered the technic in the application of plaster to the splints and believe that the difficulty has been overcome. In a series of more than twenty cases, the plaster has set quickly, uniformly and very hard in all but one case; in this case it was evident from the first that the fault lay in not using enough plaster of Paris.

In the French method, a plaster cream is made, and the crinolin forms are immersed in it just before being applied. The method we have now adopted conforms more to the usual American method of employing plaster of Paris. The method used is as follows: The folded sides of the crinolin forms are cut open, and dry plaster of Paris is incorporated into the crinolin, layer by layer, the plaster being rubbed in with the fingers. In the footpiece the line of stitching, running at right angles to the long axis, is omitted, in order to facilitate the introduction of the plaster. The edges of this piece are then kept from curling by fastening them with ordinary paper-clips. The forms in which the dry plaster has been incorporated are rolled loosely into a rather large roll, tied, and wrapped in waxed paper until ready for use, as ordinary plaster bandages are. When ready to use, the waxed paper is torn from the top of the roll and the form is placed in tepid water just covering it, with the open part at the top. When bubbling has ceased, and the form is soft throughout, it is removed from the water, and the excess of water is squeezed out. The splints are then applied in the usual manner.

* From the service of Dr. Astley P. C. Ashhurst, Episcopal Hospital, Philadelphia.

MULTIPLE POSTOPERATIVE INTESTINAL OBSTRUCTION

Hollace R. Royster, M.D., Frankfort, Ind.

Mrs. J. W., aged 46, entered the hospital at 9 p. m., Feb. 1, 1925, complaining of severe, cramplike pain in the epigastrium, accompanied with nausea and vomiting, which awakened her twenty-one hours earlier. When seen one hour later (twenty hours before entering the hospital), the abdomen was distended, more markedly on the right side, with some rigidity of the right rectus, and some tenderness around the umbilicus. Four hours previous to the onset of the pain, the patient consumed a quantity of salted peanuts, and as soon as the abdominal pain began, two teaspoonfuls of Epsom salt was given. While an attempt was being made to pass a stomach tube, she vomited a large quantity of yellowish material, containing a great many peanuts. This did not relieve the condition, nor did the administration of morphin.

On her arrival at the hospital, the tenderness had localized in the right part of the abdomen, with more marked tenderness over McBurney's point. At this time the pulse was 70, temperature 98 F., respiration 20, and a leukocytosis of 20,000. A diagnosis of acute appendicitis with intestinal obstruction was made.

Immediate laporatomy was performed, through a right rectus incision, which revealed an acutely inflamed appendix, containing pus; a constricting band of adhesions, 1 cm. in width, was found 45 cm. from the proximal end of the ileum.

Thirty-five hours following this operation, the abdomen began to distend, and the patient complained of severe pain in the upper part of the abdomen. The distention and pain could not be alleviated, fecal vomiting finally developing. Ninety-seven hours after the onset of this pain and distention, an enterostomy was performed under local anesthesia. Incision was made transversely at the level of the left iliac crest. A loop of bowel above the obstruction was quickly isolated, but found to be in such poor circulatory condition that it was thought best to plunge forceps through the mesentery, rather than attempt any suturing. The forceps were supported on each side of the wound, and left in situ for six days, at which time the bowel was firmly adherent to the wound surface. A No. 18 French catheter was anchored into the distal loop. This relieved the obstructive symptoms and the patient began to gain, being allowed to sit in a wheel chair.

Eighteen days after the enterostomy was performed, she again developed severe pain in the epigastrium, with vomiting. Immediate relief was obtained by a third incision through the original laparotomy wound, and a volvulus of the jejunum was found between the pylorus and the point of enterostomy. This and some adhesions around the ileum were relieved. The enterostomy was left intact.

The patient's condition slowly improved, with the exception of a severe dermatitis which developed on the left part of the abdomen, as a result of the drainage from the enterostomy opening.

March 14, seventeen days after the last laparotomy, the enterostomy was closed. In the jejunum, 10 cm. proximal to the enterostomy, was found a small fibrous growth, about the size and shape of a peanut shell, which necessitated resection of about 18 cm. of jejunum, an end-to-end anastomosis being

made. Microscopically this tumor was found to be a leiomyoma, with areas of hyalinization and calcification.

Thirty hours following the closure of the enterostomy wound, a severe acidosis, associated with painful tonic and symmetrical spasm of the muscles of the extremities developed, which were relieved by the intravenous injection of 700 c.c. of 5 per cent. glucose with 5 units of insulin, March 16, and 1,000 c.c. with 6 units, March 17.

A skin infection developed in the enterostomy wound, and unfortunately the patient developed an extensive back sore over the sacral region. Early in her illness, an abscess of the left deltoid, due to an infection from a hypodermic needle, had to be drained.

The patient is now up and around a few hours each day, and is rapidly gaining strength.

The interesting phases of this case are:

1. Acute appendicitis associated with intestinal obstruction, with a pulse rate of 70, temperature 98 F., and a leukocytosis of 20,000.
2. Two postoperative intestinal obstructions, the later occurring above the enterostomy made to relieve the first.
3. The finding of a leiomyoma of the jejunum, which probably caused the volvulus occurring between the pylorus and the enterostomy opening.
4. Intestinal resection required on account of a tumor and to close the enterostomy.
5. The relief of a severe acidosis by the administration of glucose and insulin intravenously.

People's Life Building.

CAMPHOR LINIMENT POISONING

HENRY H. HAFT, M.D., SYRACUSE, N. Y.

Camphor, when taken in very large doses, produces epileptiform convulsions, preceded by vertigo, excitement and delirium. Intense heat and burning may be felt in the mouth and in the abdomen.

The case reported here is one of poisoning by camphor liniment, 1½ ounces (45 c.c.), taken by mistake under the impression that it was olive oil.

REPORT OF CASE

Mr. H. had been in the habit of taking olive oil periodically for "gallstones." It was customary for him to drink it while in the drug store. Immediately after taking his customary dose, he complained to the drug clerk that it didn't taste right, and that his mouth burned, whereupon the clerk hurriedly offered him some more, assuring the patient that this would taste better.

On leaving the drug store, the patient began to complain of a burning sensation in the throat, retrosternum and in the pit of the stomach. He became very much excited, and was almost maniacal.

One hour later I saw him. He was unconscious and in bed. He had previously had a convulsion lasting about five minutes, following the excitement stage previously mentioned. This was observed by Dr. Philip Rosenberg, through whose courtesy I was asked to see the patient. The pupils were contracted; the face was flushed and moist; the breathing was stertorous and slow; there was no evidence of paralysis of any of the extremities. The pulse rate was 80. The heart sounds were feeble, soft and indistinct. There was no evidence of murmurs. The systolic blood pressure was 165; diastolic, 80. There was no evidence of any bed wetting or involuntary bowel movement.

The patient remained unconscious for about half an hour. On recovering consciousness he complained once more of the bitter, burning taste in his mouth, and soon after vomited. The vomitus had the unmistakable odor of camphor liniment. This was so evident that the various members of the family present all recognized it. Unfortunately the vomitus was not saved for chemical examination, but its peculiarly unmistakable odor was present on clothing which had been soiled by the vomitus when I made an examination some time later.

The drug clerk, on being questioned, admitted that he might have given the patient camphor liniment instead of olive oil. The patient had had no after-effects two weeks later.

721 East Genesee Street.

Special Article

THE ART AND PRACTICE OF MEDICAL WRITING

X. REVISION *

GEORGE H. SIMMONS, M.D.
Editor and General Manager Emeritus, American Medical Association
AND
MORRIS FISHBEIN, M.D.
Editor, Journal American Medical Association
CHICAGO

(Concluded from page 1497)

In his well written, interesting and practical book, "Notes on the Composition of Scientific Papers," Sir T. Clifford Allbutt says that it was his custom to make at least four drafts of a manuscript before it could be considered ready for the printer. The first draft was the article as compiled from the notes that had been carefully collected on slips and arranged in logical order. Sir Clifford then deleted redundant words, phrases, sentences and paragraphs, as a result of which the manuscript became from 20 to 25 per cent. shorter. At the same time, sentences out of position for coherence or logical development of thought were moved to better positions. Naturally, also, second thoughts, which in many instances are better than first thoughts, were inserted as they occurred. In the next revision, sentences and paragraphs were recast so as to carry but one meaning; ornamental and figurative passages were modified or removed, and particular attention was given to the choice of exact words for the meanings to be conveyed. A few weeks were allowed to elapse and then Sir Clifford read the entire manuscript again, with refreshed attention, and made the final additions and revisions.

Consider how the average manuscript is written: The physician surrounds himself with some textbooks, reprints, a few periodicals and some penciled notes, and starts to write his paper, probably in longhand. After more or less worry, and possibly some sleepless nights, he breathes a sigh of relief, thanks Heaven that it is finished, and has it typewritten. He may read the typewritten copy and make one or two corrections before sending it to a medical journal; more likely, he reads the paper before a society and then, without any revision worthy of the name, sends it for publication. Not a few manuscripts submitted for publication bear evidence that the only reading given them was that of the typist, and that she frequently has not corrected her own misspelling. "To have a manuscript typewritten," said an editorial writer in the *British Medical Journal* recently, "and then to send it for publication

* This instalment completes the series of articles on "The Art and Practice of Medical Writing," for publication in THE JOURNAL. The complete series is to be published in book form, with the addition of numerous examples to the portions already published in THE JOURNAL, and with additional chapters on the collection of notes and material, and on spelling, including capitalization, hyphenation and other points. Supplements will be devoted to standard abbreviations, the uses of numbers and figures, abbreviations of proper names of medical periodicals, and a guide list of American medical periodicals, giving the names of editors, places of publication, and types of materials used.

without revision is a crime comparable to operating with unwashed hands."

Many physicians have envied Sir William Osler his easy command of English writing. In the Osler Library is a collection of some of his manuscripts, showing the various stages in their preparation. First are notes on paper of various kinds, evidently written on trains and at opportune moments; then a rough outline in longhand; next the first typewritten copy with interlineations, transpositions and deletions; then the second typewritten copy, which also bears evidence

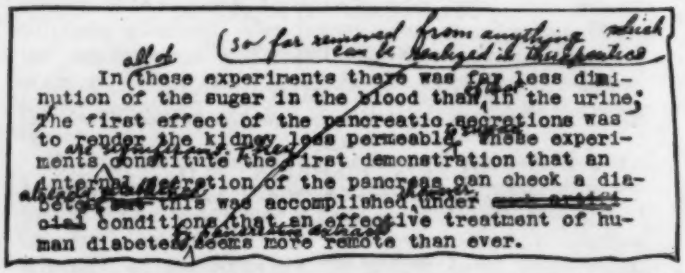

In these experiments there was far less dimi-
nution of the sugar in the blood than in the urine;
the first effect of the pancreatic secretions was
to render the kidney less permeable. These experi-
ments constitute the first demonstration that an
internal secretion of the pancreas can check a dia-
betes, but this was accomplished under such artifi-
cial conditions that an effective treatment of hu-
man diabetes seems more remote than ever.

Fig. 1.—This manuscript possesses several of the worst mechanical faults that a manuscript can have. It is single spaced; the margins are insufficient; the corrections are crowded and almost illegible. No manuscript exhibiting any of these faults should be offered for publication.

of much modification, and, finally, a third typewritten copy, which evidently was used by the printer. Even this copy has three or four minor corrections.

Anatole France, Nobel prize winner in literature, said that seven revisions are necessary and an eighth desirable, in order to make sure that the corrections on the seventh have been understood. "In the first," it has been said, "he enlivened what had been platitudinous. The second was for 'weeding out the dandelions,' whos, whiches, and whoms. In the third, he eliminated the semicolons, shortened his sentences, and struck out phrases which merely linked one sentence with another, or marked a transition from one thought to another, a task that should not be left to the reader. In the fourth draft he gave special attention to the order of sentences and to the repetition of the same word; he looked on the recurrence as a warning to rewrite the sentence, not to search for a synonym. The fifth draft saw the disappearance of adjectives, for he was of the opinion of Voltaire, that though the adjective might agree with the substantive in gender, number and case, very often it did not suit it. From the sixth draft he chipped away what he called the pastry, all that was adventitious and redundant, and over the seventh draft he passed the plane, for, he said, a good writer is like a good cabinet maker —he planes his phrases smooth."

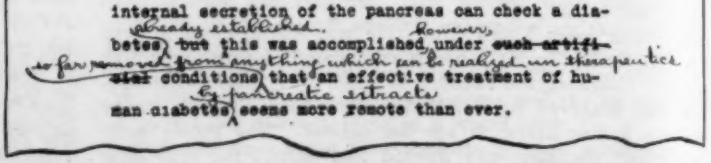
Trelease and Yule, in their practical book, "The Preparation of Scientific and Technical Papers," suggest ten revising processes, pointing out, however, that it is unnecessary to copy the pages until they become crowded with corrections. Their first revision is for consistency, involving the removal of irrelevant material and the avoidance of contradictions. Next, the structure of individual sentences is improved, and it is emphasized that few sentences should have more than thirty words. The punctuation should be simple. Revisions are then made for clearness of sentences and paragraphs; to avoid repetition; to justify conjunctions, interjections and relative pronouns; to make certain that the article reads smoothly; to correct punctuation; to make capitals, italics and subheadings consistent, and, at last, to make certain that statements are accurate.

In revising the final copy of the manuscript, preliminary to sending it to the publisher, it will be well to bear in mind certain points that are important from the standpoint of the manuscript editors, who will be responsible for going over the paper preliminary to sending it to the compositor, and that will aid the compositor in his work. All corrections on final copy should be made in ink and inserted above the place at which they are to appear, and a line should be drawn from the insertion to the point at which the addition is to be made, so as to indicate clearly its exact place in the sentence.

Figures 1 and 2 illustrate mechanical faults of manuscripts and the proper way of inserting corrections.

The results of revision are apparent in shortening the manuscript and in giving it a strength of tone. A paragraph from an article in a state medical journal is here submitted. Apparently, the paper was published without revision, for it contains practically all the faults that have been mentioned in this series of articles, as well as most of the faults referred to in elementary books on grammar and rhetoric. The entire essay contains 2,800 words. These are divided into twelve paragraphs and but thirty-three sentences, or an average of eighty-four words to a sentence. One sentence contained 208 words. The paragraph referred to was as follows:

We know, of course, that a few of the state societies have recently taken it upon themselves to initiate a campaign intended to courteract in some measure the ravages of quackery and such an effort is a very praiseworthy one and we bespeak for it a considerable degree of success, and it behooves us as members of the societies to assist in every possible manner the furtherance of this effort, and also seek to enlist the aid of those of the profession who are not yet members of our socieities, that a united front may be presented in the fight as this is essential to the success of the campaign and we must realize further, that such a united effort does not at all excuse an individual effort but rather makes this more obligatory and should remember also, that in this as in all other campaigns of any character, that we will get only as much out of it as we put into it, so there must be no shirking of our obvious duty in this regard.


In these experiments there was far less dimi-
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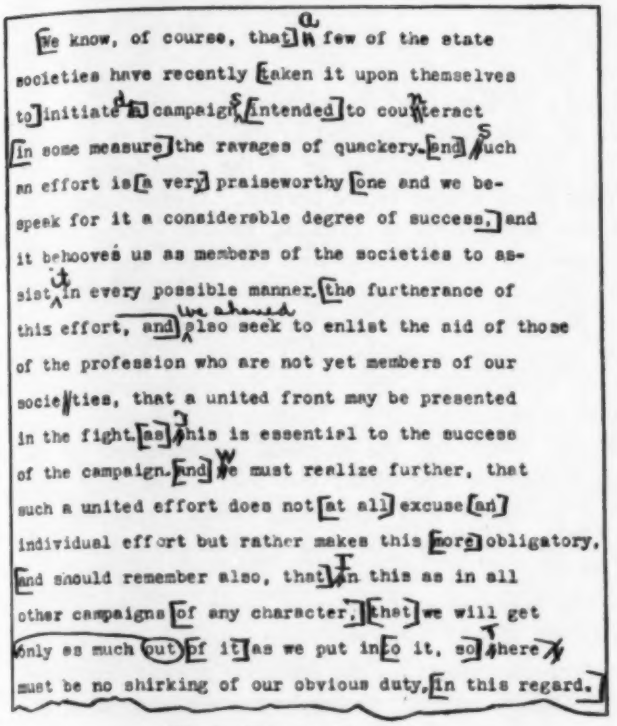
ments constitute the first demonstration that an
internal secretion of the pancreas can check a dia-
betes, but this was accomplished under such artifi-
cial conditions that an effective treatment of hu-
man diabetes seems more remote than ever.

Fig. 2.—The wide spacing and ample margins of this manuscript give opportunity for legible correction.

The first step in revision included the bracketing of unnecessary words and the breaking up of the long sen-

tences into several short ones. The revised paragraph is shown in Figure 3.



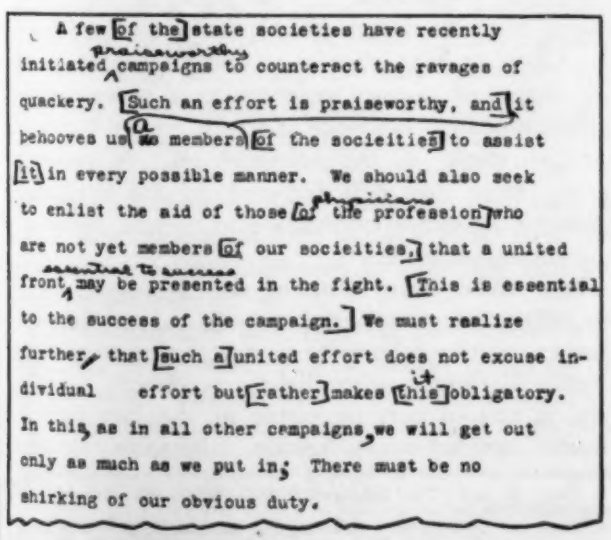
We know, of course, that a few of the state societies have recently taken it upon themselves to initiate a campaign, intended to counteract in some measure the ravages of quackery. And such an effort is a very praiseworthy one and we bespeak for it a considerable degree of success, and it behooves us as members of the societies to assist it in every possible manner, the furtherance of this effort, and we should also seek to enlist the aid of those of the profession who are not yet members of our societies, that a united front may be presented in the fight. As this is essential to the success of the campaign. And we must realize further, that such a united effort does not at all excuse an individual effort but rather makes this more obligatory, and should remember also, that in this as in all other campaigns of any character, that we will get only as much out of it as we put in to it, so there must be no shirking of our obvious duty, in this regard.

Fig. 3.—First step in revision.

When the paragraph was copied, after revision, it appeared as follows:

A few of the state societies have recently initiated campaigns to counteract the ravages of quackery. Such an effort is praiseworthy, and it behooves us as members of the societies to assist it in every possible manner. We should also seek to enlist the aid of those of the profession who are not yet members of our societies, that a united front may be presented in the fight. This is essential to the success of the campaign. We must realize further, that such a united effort does not excuse individual effort but rather makes this obligatory. In this as in all other campaigns we will get out only as much as we put in. There must be no shirking of our obvious duty.

With further revisions for punctuation, diction and emphatic style, the paragraph appeared as in Figure 4.



A few of the state societies have recently initiated praiseworthy campaigns to counteract the ravages of quackery. Such an effort is praiseworthy, and it behooves us as members of the societies to assist it in every possible manner. We should also seek to enlist the aid of those of the profession who are not yet members of our societies, that a united front may be presented in the fight. This is essential to the success of the campaign. We must realize further, that such a united effort does not excuse individual effort but rather makes this obligatory. In this as in all other campaigns we will get out only as much as we put in; There must be no shirking of our obvious duty.

Fig. 4.—Appearance of paragraph after further revision.

Here, then, is the paragraph as finally revised, probably still susceptible of improvement in diction:

A few state societies have recently initiated praiseworthy campaigns to counteract the ravages of quackery. As members, it behooves us to assist in every possible manner. We should also seek to enlist the aid of those physicians who are not yet members, that a united front, essential to success, may be presented in the fight. Further, we must realize that united effort does not excuse individual effort but makes it obligatory. In this, as in all other campaigns, we shall get out only as much as we put in; there must be no shirking of our obvious duty.

New and Nonofficial Remedies

THE FOLLOWING ADDITIONAL ARTICLES HAVE BEEN ACCEPTED AS CONFORMING TO THE RULES OF THE COUNCIL ON PHARMACY AND CHEMISTRY OF THE AMERICAN MEDICAL ASSOCIATION FOR ADMISSION TO NEW AND NONOFFICIAL REMEDIES. A COPY OF THE RULES ON WHICH THE COUNCIL BASES ITS ACTION WILL BE SENT ON APPLICATION. W. A. PUCKNER, SECRETARY.

BROMSULPHALEIN-H. W. & D.—Disodium phenoltetrabromphthaleinsulphonate.—$O.CO.C_6Br_4.C[C_6H_3(OH)SO_3Na]_2$.

The disodium salt formed by the interaction of tetrabromphthalic acid (or anhydride) and phenol with subsequent sulphonation. It contains from 37 to 38 per cent. of bromine.

Actions and Uses.—Bromsulphalein-H. W. & D., after intravenous injection into normal rabbits, is excreted in the bile to the extent of about 85 per cent. in one hour. Normally it is rapidly removed from the blood stream, but when the liver is extirpated it is retained in the blood stream almost completely. In normal animals the drug appears in the urine in traces only or not at all. Experiments on man have been in accord with animal experiments.

Bromsulphalein-H. W. & D. is used as a test of liver function; the amount remaining in the blood stream after intravenous injection, as determined colorimetrically, is considered a measure of hepatic dysfunction.

Dosage.—0.002 Gm. per kilogram of body weight is injected intravenously in 5 per cent. aqueous solution without dilution. To carry out the test, the solution of salt may be injected into an arm vein; thirty minutes after the injection, a specimen of blood (from 4 to 5 Cc.) is drawn, preferably from the opposite arm, by allowing the blood to run from the needle directly into a dry test tube; after the blood has coagulated it is centrifugalized and the serum is pipetted into two small test tubes; to one of these is added one or two drops of a 10 per cent. solution of sodium hydroxide, and to the other tube, a drop of hydrochloric acid; the amount of dye present is determined by comparison with a series of standards.

Manufactured by Hynson, Westcott & Dunning, Baltimore. U. S. patent and trademark applied for.

Solution Bromsulphalein-H. W. & D.: Ampules containing 3 Cc. of a sterile 5 per cent. solution of bromsulphalein-H. W. & D.

Bromsulphalein-H. W. & D. is a white, crystalline powder, soluble in water, insoluble in alcohol or acetone. The aqueous solution is almost colorless.

To a few cubic centimeters of a 1 per cent. solution of bromsulphalein-H. W. & D., add a drop of hydrochloric acid; no precipitate is formed. To 3 Cc. of a 1 per cent. solution of bromsulphalein-H. W. & D., add a drop of sodium hydroxide solution; an intense bluish purple color results. To 2 Cc. of a 1 per cent. aqueous solution of the salt, add a drop of hydrochloric acid, heat to boiling and add an equal volume of boiling 1 per cent. barium chloride solution; the liquid remains clear while hot (*absence of sulphate*); on cooling, crystals of a difficultly soluble barium salt form which under the microscope appear as groups of platelets (*distinction from barium sulphate*). To a 1 per cent. solution of the salt, add an equal volume of 5 per cent. calcium chloride solution; no precipitate forms, even after the addition of an equal volume of alcohol. Acidify a 1 per cent. solution of the salt with nitric acid and add silver nitrate solution; not more than a slight opalescence is produced (*limit of ionic halogen*). To each of a series of phosphate buffer mixtures from p_H 6.8 to p_H 8.8 of 5 Cc. each, add a drop of 5 per cent. solution of bromsulphalein-H. W. & D.; there is no color at 6.8; a faint perceptible purple at 7.0; the color increases in intensity up to 8.4.

Determine the bromine content of bromsulphalein-H. W. & D. by the lime or the sodium hydroxide combustion method; the bromine content is from 37 to 38 per cent.

THE JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION

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SATURDAY, MAY 23, 1925

LIGHT AND NUTRITION

The last decade is likely to become notable in the history of the medical sciences because of its contributions to the science of nutrition. These have been notable, first, in the extension of our knowledge of vitamins, and, secondly, because of the analysis of the actions of light on the body. The Medical Research Council of Great Britain only recently paid tribute to the current progress in these words:[1]

> It is difficult to exaggerate the far-reaching importance of this work to a population like ours, living in a northern climate and, for the present at least, in smoky cities where rickets and its accompaniments have been a long standing curse. All these studies, still in active progress, have given new hopes, of which some are already realized, of a widespread diminution of disease and of a great future improvement in the health, stature and beauty of people in this country.

In harmony with such sentiments, two noteworthy contributions[2] have recently appeared in THE JOURNAL. Presenting the observations of independent investigators, they corroborate and supplement each other, and give an abundance of food for thought to even the most "practical" of practitioners. It is rarely, indeed, that the research of the laboratory, in contrast with bedside observation, brings its results so closely into relation with practical therapeutics and preventive medicine.

For some time it has been known that both cod liver oil and certain types of radiant energy—the so-called ultraviolet rays—may act in some subtle way as regulators of mineral metabolism, at least so far as calcium and inorganic phosphorus are concerned. This effect has been expressed as a maintenance of the physiologic salt equilibrium of the body in the presence of salt combinations of different complexities which are continually being absorbed from the food. The phenomenon is an extraordinary one. As Park significantly pointed out several years ago, neither cod liver oil nor radiant energy supplies the required calcium or the phosphorus. It is an extraordinary fact, however, that either one can enable an animal, kept in a state of calcium or of phosphorus starvation, to obtain so good a utilization of the minimal quantities of calcium or of phosphorus supplied in the food as to maintain the level of the calcium or of the phosphorus in the body fluids almost at the normal. Without supplying either phosphorus or calcium, radiant energy or the potent component of cod liver oil causes the organism to operate as if a requisite or almost requisite quantity of phosphorus or calcium were supplied. They do so by supplying something that makes the metabolism more efficient; i. e., they cause the organism to operate with increased economy. Neither the histologic studies of the bones nor the chemical examinations of the blood indicate that either cod liver oil or light bring new processes into operation, rather permitting the organism to have full use of processes that were natural to it all the time, but were not effective.[3]

The fact that such different agents as light and cod liver oil should have the same effect on rickets has made it incumbent on the research worker, Steenbock and Daniels remark, to supply the explanation or else admit definitely that little is known about the etiology of the disease. The answer seems to have been found in the now repeatedly verified observation that light can impart antirachitic properties to certain otherwise inert compounds. Such a transformation, *mirabile dictu*, has been noted with meat, milk, cereals and various other common foods that ordinarily are not antirachitic in potency despite whatever other nutrient virtues they may have. From a strictly chemical standpoint it is highly noteworthy that cholesterol, the long known lipoid component of animal cells, is readily activated in this way by irradiation with ultraviolet rays.[4] The active product is a comparatively stable substance. It is thus easy to understand why the antirachitic component of cod liver oil has been secured from the nonsaponifiable fraction of cod liver oil. Chemists have already separated products of a high degree of potency representing a concentration of the antirachitic substance of the oil several hundred times as strong as the untreated oil. It requires scarcely more than 0.01 per cent. of the irradiated cholesterol to secure calcification of rachitic bones in experimental animals.

These studies have furnished the explanation as to how light acting directly on the body and cod liver oil taken by mouth can have the same action in preventing rickets. Evidently, when light acts directly on the body, it acts in part by virtue of the fact that it activates antirachitically certain substances already

1. Report of the Medical Research Council for the Year 1923-1924, Committee of the Privy Council for Medical Research, London, His Majesty's Stationery Office, 1924.
2. Hess, A. F.: The Ultraviolet Rays of the Sun, J. A. M. A. **84**: 1033 (April 4) 1925. Steenbock, Harry; and Daniels, A. L.: Irradiated Foods and Irradiated Organic Compounds, ibid. **84**: 1093 (April 11) 1925.
3. Park, E. A.: The Etiology of Rickets, Physiol. Rev. **3**: 135 (Jan.) 1923.
4. Hess, A. F.; Weinstock, Mildred; and Helman, F. D.: The Antirachitic Value of Irradiated Phytosterol and Cholesterol, I, J. Biol. Chem. **63**: 305 (March) 1925.

present. Steenbock and Daniels assert that, superficially considered, it thus becomes immaterial whether active compounds are ingested or whether they are activated after they are absorbed. The end-result is the same. Hess and his collaborators, commenting on the results of irradiating cholesterol, regard it as particularly interesting that this substance should be susceptible, since it has been regarded as chemically inert, although its ubiquitous presence in the cells has rendered it an object of study for many years. The number of disorders with which, from time to time, it has been associated is manifold, but in no disease or metabolic disturbance has investigation proved that it assumes a constant or essential rôle. Cholesterol does not occur in plants; they contain somewhat related compounds, termed phytosterols. The latter have sometimes been regarded as the sterol precursors of the animal tissue lipoid. It is significant, therefore, that phytosterols also can be activated into antirachitic potency by radiations of short wave length. Foods of animal and vegetable origin are thus brought into common relations to radiant energy. The linking up of light with food factors and nutrition is a triumph of present-day biochemical research.

VACCINATION AGAINST TUBERCULOSIS

Uncontrolled natural infection with tubercle bacilli immunizes to a certain degree against reinfection. If the human race acquires more or less protection by this haphazard process, it is not unreasonable to suppose that controlled inoculation might operate even more safely and effectively. Many attempts have been made, both in man and in animals, to produce an active immunity to tuberculosis by inoculation of measured doses of tubercle bacilli, living and dead, but little practical success has been thus far achieved.

The chief difficulties appear to be that the use of living tubercle bacilli as immunizing agents is dangerous, and that dead tubercle bacilli are ineffectual antigens. It is usually conceded that a parallelism exists between sensitiveness to tuberculin and immunity in tuberculosis, and it has also been commonly held that such sensitiveness develops almost solely as a result of actual infection, and only in small degree from the injection of dead bacilli. Recently, however, a number of observers have found that dead tubercle bacilli injected into animals produce a stronger and more lasting hypersensitiveness to tuberculin than was formerly supposed.[1]

Few investigators have reported the stimulation of tuberculin hypersensitiveness in human beings by the use of dead tubercle bacilli, although many have attempted to produce it. Moro[2] believes that the difficulty lies in the fact that a certain degree of tissue reaction at the site of inoculation is necessary for the development of the desired allergy, and that the tissues of the noninfected child, not being allergic in the first place, fail utterly to respond on the injection of dead tubercle bacilli. By the unique method of injecting heat-killed tubercle bacilli simultaneously with cowpox virus in young children never before vaccinated and not reactive to tuberculin, he asserts that he has produced typical tuberculin hypersensitiveness, under conditions in which the possibility of natural infection with the tubercle bacillus could be eliminated. The cowpox vaccination "takes" in the usual manner, and some months later the children are found sensitive to tuberculin. The acute reaction to the cowpox virus is believed to be concerned in the absorption of the dead tubercle bacilli.

The question is raised as to how high a degree of immunity such a procedure might be expected to develop. Certainly, as Moro states, it could not be expected to surpass that resulting from actual mild infection with living organisms, which appears to protect against moderate but not massive superinfection. Obviously, even this degree, without danger, would be a highly desirable attainment. Moro is careful to state that his investigations are strictly in the experimental stage (Versuche), and that the vaccinating dosage as well as other important details are yet to be worked out.

1. Sensitization to Tuberculin Induced by Dead Tubercle Bacilli, Editorial, J. A. M. A. **83**: 359 (Aug. 2) 1924.
2. Moro, E.: Ueber Versuche, dem Säugling mittels eines kombinierten Vakzinationsverfahrens aktiven Tuberkuloseschutz zu verleihen, München. med. Wchnschr. **72**: 172 (Jan. 30) 1925.

ANCYLOSTOMIASIS AND BILHARZIASIS IN EGYPT

Egypt has four diseases that incapacitate and cause the death of a high percentage of the population: bilharziasis, ancylostomiasis, ophthalmia and pellagra. Ancylostomiasis is endemic in Egypt. A similar disease was depicted by the ancient Egyptians, but ancylostoma worms were first found in Egypt by Pruner in 1847 at necropsies in Cairo. Bilharz and Griesinger, in 1853, connected these parasites with "Egyptian anemia," which they estimated to be the cause of more than one fourth of all deaths in Egypt. Until 1913, however, no exact knowledge as to the incidence of ancylostomiasis was available. In that year the first serious attempt by the government to deal with this disease was undertaken.

The Public Health Laboratories, Cairo, have recently published a report of this work, which began with a survey in 1914. Among 29,281 persons examined, 60.8 per cent. were found to be infected, and 11,280 persons were admitted to hospitals. The average percentage of hemoglobin in a large number of these patients was 44. Five physicians and two assistants surveyed two of the fourteen provinces of Egypt at an average cost of $1.77 per person examined and $3.20 per person treated. This unusual expense (compared with similar work in other countries) was largely due to treating all infected persons in hospitals.

The World War caused the work to be discontinued in 1915, and it was not resumed until late in 1919. In the meantime, antimony and potassium tartrate had been found effective in bilharziasis, and it was considered advisable to include the treatment of this disease in the campaign against ancylostomiasis. The department of health decided to make an intensive survey of a small center near Cairo. So-called ancylostomiasis and bilharziasis annexes were established as near as possible to existing general hospitals. They comprised an enclosed area in which tents were erected, each tent holding about twenty cots.

A patient was given a purge the previous evening and two capsules containing oil of chenopodium (0.5 c.c. in each) in the morning, and then one or two more capsules in about ninety minutes. Castor oil (30 c.c.) was given one hour later, and the patient was instructed to return in four days, when the treatment was repeated. He was supplied with an iron and arsenic mixture to be taken in the meantime. Thymol was given in cachets with an equal amount of sodium bicarbonate, a saline purge preceding and following the thymol treatment. Patients having both ancylostomiasis and bilharziasis were treated, first, for the former. After eleven intravenous injections of sodium antimony tartrate had been given, patients having bilharziasis were reexamined and told to return in three months.

The total number of patients treated in 1921 was 31,094, of whom 16,600 harbored bilharzia ova. The number of new patients in 1922 was 30,814, of whom 17,618 harbored bilharzia ova. The total number of new patients treated at the annexes in 1923 was 46,501, of whom 28,762 had bilharziasis. There were periods when the number of patients was so great that they could not all be accepted. When work was scarce many more people came for treatment.

In considering the extension of this work over larger areas in Egypt, expense is a serious item. The cost of drugs was reduced by the substitution of carbon tetrachlorid in 1924 for thymol and oil of chenopodium. The salaries of the medical officers amounted to about 40 per cent. of the total expenditure (two were attached to each annex), the salaries of attendants to about 20 per cent., and the cost of equipment, drugs and rent to about 40 per cent.

There is proof in mummies buried a thousand years B. C. that bilharzia was then prevalent in Egypt. Dr. Khalil, in charge of the parasitology section of the Public Health Laboratories, considers that the incidence is steadily increasing in recent years and that at least 9,000,000 people are infected. To combat bilharziasis the report recommends, among other things, the guarding of streams against pollution and the extermination of snails. It was found by experimentation that copper sulphate in dilute solutions kills these intermediary hosts of schistosomes without injuring the crops in the fields. The most promising method seems therefore to be treatment of the flooded areas with copper sulphate, and at the same time the erection of house and village latrines. It will be necessary also to instruct the public in the danger of stream pollution, secure the cooperation of religious authorities in condemning stream pollution, guard the water used for household purposes, and extend the campaign of treatment of infected persons over as large an area as possible.

Current Comment

WHEN THE SPLEEN MAY BECOME USEFUL

The human body may at any time be exposed to a variety of circumstances that may make unusual demands on the supply and transport of oxygen to its tissues. Vigorous muscular exercise, for example, quickly tends to create an oxygen want that may presently become sufficiently acute to limit the possibilities of further work until recovery has taken place. Lowered barometric pressure, such as one experiences at high altitudes, likewise gives rise to a degree of anoxemia subject to compensatory adjustments. Quickened respiration and circulation are temporary physiologic expedients to meet such situations. In the long run, these will not suffice; hence there may arise an increment in the oxygen-carrying capacity of the blood as the result of augmentation of its hemoglobin-bearing corpuscles. Sometimes the emergencies are extremely acute and threatening, as after extensive loss of blood through hemorrhage or deterioration of the circulating fluid in carbon monoxid poisoning. The latter is essentially a phenomenon of anoxemia, since Haggard and others have shown that the effects of carbon monoxid on various tissues are those of oxygen want only. A remarkable adjustment to such conditions has lately been observed by Barcroft[1] and some of his co-workers at the University of Cambridge. It appears from their experiments that the spleen, under circumstances which call for an accession of hemoglobin in the blood can, by contracting, add to the amount of that pigment in circulation. On this view the spleen would act, as Barcroft expresses it, as a reservoir or floating balance to be drawn on in case of such emergencies. That this contractile response of the spleen under the stress of an asphyxia is not purely trivial in extent, but may be of real physiologic advantage, has been demonstrated by the difference in longevity between splenectomized animals and those retaining their spleen, the latter invariably surviving severe carbon monoxid poisoning a longer time. In other types of intoxication not involving anoxemia, the possession of the spleen has not been proved of advantage from the standpoint of survival. When the spleen is removed from nervous connections with the rest of the body, it does not con-

1. Barcroft, Binger, Bock, Doggart, Forbes, Harrop, Meakins and Redfield: Phil. Tr. Roy. Soc. B. **211**: 419. Barcroft, Meakins, Davies, Scott and Fetter: Ibid., p. 435. Barcroft, J., and Barcroft, H.: J. Physiol. **58**: 138 (Dec.) 1923. Hanak, A., and Harkavy, J.: Ibid. **59**: 121 (Oct.) 1924. De Boer, S., and Carroll, D. C.: The Mechanism of the Splenic Reaction to General CO Poisoning, ibid. **59**: 312 (Dec. 23) 1924. Barcroft, J.; Murray, C. D., and Sands, J.: The Effect of Splenectomy on Carbon Monoxide Poisoning, ibid. **59**: xxxvii (Dec. 23) 1924.

tract so as to expel hemoglobin-bearing erythrocytes into the blood stream in response to anoxemia. The contractile response is supposed to be an effect of oxygen want in the spinal cord. Physiologists will in any event breathe a sigh of relief that some worthwhile function has been discovered for a large organ—the spleen—that has long taxed their ingenuity in discovering some use that it may serve.

COAGULATION OF THE BLOOD

One of the most important tests applied to the blood by the practicing physician is the determination of the time necessary for coagulation. Such tests are important before all operative procedures involving the cutting of blood vessels, and also in women before the birth of a child. The method of making such determinations varies from simple observation of a drop of blood on a glass slide to the use of complicated and intricate devices that have been elaborated particularly for the purpose. Dr. O. S. Gibbs[1] of the department of pharmacology in the University of Edinburgh recently developed a method involving the use of a broken loop of platinum wire, the coagulation time being that in which a small drop of blood placed on the loop ceases to move when the loop is rotated. He has now extended his observations with this device, comparing its use with that of other apparatus for the purpose. In all devices in which contact of the blood with the instrument is reduced to a minimum, Dr. Gibbs finds, not only the area of contact, but also the nature of the material coming into contact with the blood causes a variation in the end-point of coagulation. Comparisons were made in the use of loops of wire made of tungsten, platinum, nickel and copper plated platinum. It was found that the slightest tarnishing tends to shorten the coagulation time, and that coating the wire with collodion brings the clotting time back to normal. Again, temperature and the humidity of the room seem to have a definite effect. Furthermore, slight traces of such volatile bodies as ether, chloroform, xylene or volatile oils may have a marked delaying effect on the clotting time. It becomes, of course, possible to deduct for the variations in the method when a given test is used over a long period of time. Dr. Gibbs concludes that the time of coagulation of a drop of human blood obtained by pricking varies with the area of contact with foreign material, with the nature of the material and with the temperature. When blood is obtained by any other method, as by the use of a cannula, or by pricking an ear vein, the coagulation time is inconstant. It is his belief that such methods give no certain indication of the degree to which hemorrhage is prevented by hemostatic remedies in the body when small blood vessels are severed, since the effect of the tissue products on clotting is eliminated to a varying extent by the methods employed. As will be readily perceived, this work is important not only for its direct practical application to human surgery, but also as a guide in the estimation of the value of various alleged hemostatic substances.

1. Gibbs, O. S.: Clinical Blood Coagulometer, Quart. J. Med. 17: 312 (April) 1924; Measurement of the Blood Coagulation Time, J. Physiol. 59: 426 (March 31) 1925.

Association News

THE ATLANTIC CITY SESSION

Fort Riley Reunion Association

Owing to the probably small attendance of Fort Riley men at the Atlantic City session, and also to the fact that a general reunion of all medical officers of the World War has been arranged for Wednesday evening, it has been considered advisable to omit the special Fort Riley reunion this year. All Fort Riley men who may attend the session are urged to attend the general reunion of service men at the Ritz Carlton Hotel at 7 o'clock Wednesday evening, May 27.

Arrangement for a Fort Riley reunion during the session of the American Medical Association next year will be announced later.

GEORGE S. DAVIS, President.
FREDERICK R. GREEN, Secretary.

Medical News

(PHYSICIANS WILL CONFER A FAVOR BY SENDING FOR THIS DEPARTMENT ITEMS OF NEWS OF MORE OR LESS GENERAL INTEREST: SUCH AS RELATE TO SOCIETY ACTIVITIES, NEW HOSPITALS, EDUCATION, PUBLIC HEALTH, ETC.)

ARKANSAS

Lower Entrance Requirements Condemned.—The Arkansas Medical Society at Little Rock, May 13-15, passed a resolution condemning the effort being made in that state to lower medical standards and commending the state medical board and University of Arkansas Medical Department for opposing all schemes to lower entrance requirements. The society inaugurated a loan fund, with $1,000 as a nucleus, to help Arkansas students who desire to enter the University of Arkansas Medical Department, and voted $200 to assist in extending the circulation of *Hygeia* among educators, legislators and other laymen. Dr. Harvey D. Wood, Fayetteville, was elected president for 1925-1926; Drs. John L. Smiley, Siloam Springs, Horace R. McCarroll, Walnut Ridge, and Solomon F. Hoge, Little Rock, vice presidents; Dr. Royal J. Calcote, Little Rock, treasurer, and Dr. William R. Bathurst Little Rock, secretary-editor, reelected. The next annual meeting place will be Hot Springs.

CALIFORNIA

Diploma Mill Indictments Dismissed.—Superior Judge Roche, San Francisco, April 27, dismissed the twenty-one indictments against members of the alleged diploma mill on motion of the prosecution. The prosecutor said, it is reported, that the authorities of San Francisco did not give to the district attorney the funds needed to prosecute these cases. He also said that the state board of medical examiners had done all that was humanly possible to bring these cases to trial.

Historical Number of Journal.—The May issue of *California and Western Medicine* is largely devoted to the history of medicine in California, including the early Spanish and Mexican periods. There are short histories also of many county medical societies, of the Lane Medical Library, of women in medicine in California, of the California pandemic of 1833, of California's medical practice acts, and there are reproductions of photographs of pioneer medical men. The bronze plaque recently dedicated by the state society to the memory of Dr. LaFayette H. Bunnell makes an appropriate cover page (THE JOURNAL, April 25, p. 1278).

General Grant Crist Arrested.—Special Agent Albert Carter of the state board of medical examiners arrested General Grant Crist, Los Angeles, recently, on a charge of violating Section 17 of the State Medical Practice Act. It has developed since the arrest that Crist has practiced medicine for several years in Los Angeles without a license, his principal practice formerly being, it is reported, the treatment of venereal disease. He was arrested, March 16, by a detective agency following an alleged abortion performed on a girl

15 years old. Crist's record book contains the names and addresses of many women patients, in his desk were hypodermic needles and narcotics, and on his prescription blanks and printed cards the title "M.D.," "Physician and Surgeon" appeared after his name. A later report states that Crist pleaded guilty to performing an illegal operation and was fined $250.

Society News.—Dr. Clifford D. Sweet, Oakland, addressed the Fresno County Medical Society recently on "Diphtheria," and Dr. Wallace I. Terry, professor of surgery, University of California Medical School, on "Surgery of the Thyroid."——Dr. Ernst F. Mueller, privatdozent in internal medicine, Hamburg University, Germany, who is on a leave of absence to study in this country, addressed the Riverside County Medical Society, Riverside, April 13, on "The Importance of Skin Functions in Medicine."——About 100 members of the San Diego County Medical Society inspected the U. S. Hospital Ship *Relief*, recently, which was attached to the fleet anchored in San Diego Bay, at the invitation of Commander William D. Owens. The *Relief* is of all steel construction, and the surgery, roentgen-ray, laboratory, cystoscopic, eye, ear, nose and throat departments have most modern and complete equipment. A bed in this ship is said to cost the government about $25 a day. Following the inspection of the ship, Dr. Harold A. Thompson, San Diego, read a paper on "Ethylene as an Anesthetic."

GEORGIA

State Medical Election.—At the seventy-sixth annual meeting of the Medical Association of Georgia, Atlanta, May 13-15, Dr. Frank K. Boland, Atlanta, was elected president; Drs. William R. Dancy, Savannah, and Henry M. Fullilove, Athens, vice presidents, and Dr. Allen H. Bunce, Atlanta, secretary-treasurer.

HAWAII

Territorial Association Reorganized.—At the annual meeting of the Medical Society of Hawaii, Honolulu, April 24-27, it was decided to reorganize, following the plan of the American Medical Association, and to change the name of the society to the Hawaii Territorial Medical Association. Separate county medical societies will be organized. Dr. Clifford B. Wood was elected president of the territorial association; Dr. Gideon M. Van Poole, vice president, and Dr. Forrest J. Pinkerton, secretary.

ILLINOIS

Twenty-Three Liquor Permits Revoked.—Following a hearing, May 6, before representatives of the federal prohibition office, the liquor licenses of twenty-three physicians and druggists of Lee and Ogle counties were revoked. The charges were that the prohibition regulations with regard to filling prescriptions had been violated, and that prescriptions had not been issued and filled in good faith.

Rabies Endemic in "Little Egypt."—The state director of health reports that rabies has been endemic in animals for years in that part of Illinois known as "Little Egypt," and that it is gradually extending north. More than twenty-five persons in fifteen counties have been attacked by rabid dogs since January 1, one as far north as Fulton County. No case of rabies has been reported in man this year, all exposed having taken the antirabic treatment. Twenty dogs and one cat examined (no two from the same locality) have shown the presence of rabies this year.

Hospital News.—Ground has been broken for a 325-bed Veterans' Bureau Hospital at Great Lakes, to be erected at a cost of $809,000, for the treatment of neuropsychiatric cases.——Construction has begun on the $225,000 addition to the St. Francis Hospital, Freeport.——The excavation for the new Madison County Tuberculosis Sanitarium has been completed, and construction work is under way.——Beverly Farm Home and School for Nervous and Backward Children, Godfrey, is undergoing improvements, including the addition of a dispensary and small hospital department. Its capacity will be increased to care for about twenty more children.——A sanatorium, which will accommodate 100 tuberculosis patients, is being constructed for Madison County at Edwardsville at a cost of $175,000, the citizens having voted a tax of 1.5 mills, to continue over a ten year period.——The dedication and official opening of the British Old People's Home, Twenty-Ninth Street and McCormick Avenue, Hollywood, erected at a cost of more than $250,000, will take place May 24, at 2:30 p. m. Mr. Samuel Insull will preside. Judge Holdom and the British Consul General, Mr. H. A. Richards, will give addresses.

Chicago

Dr. Simmons Returns from Tour.—Dr. George H. Simmons, Editor and General Manager Emeritus of the American Medical Association, returned this week to Chicago after a tour of almost ten months through India, China and Japan.

Society News.—Dr. Lester R. Dragstedt, professor of physiology and pharmacology, Northwestern University Medical School, will address the Chicago Society of Anesthetists at the Morrison Hotel, May 26, on "The Mechanism of Surgical Shock."——At the annual meeting of the Chicago Council of Medical Women, Dr. Mary E. Hanks was elected president, and Dr. Florence D. Johnston, secretary.

Douglas Smith Foundation for Medical Research.—The board of trustees of the University of Chicago announced, May 19, the establishment of the Douglas Smith Foundation for Medical Research, which makes available the income from about $1,000,000 to be used exclusively in the payment of stipends or salaries of members of the staff or fellows of the university engaged in medical research and expenses directly incident thereto. The donor, Douglas Smith of Chicago, has already turned over to the university securities valued at $800,000 and intends to turn over the remainder of the gift in 1925.

Hospital News.—The Franklin Boulevard Hospital and Training School for Nurses, 3230-3240 West Franklin Boulevard, was formally opened, April 5.——Contracts have been let for the new Mount Sinai Hospital, Chicago, which will have 300 beds. The building will be five stories high, constructed so as to permit the addition of six stories.——The construction of the first unit of the new Chicago Memorial Hospital, at Thirty-Third Street and Groveland Park, will begin this summer. It will accommodate 100 patients. The cost, about a half million dollars, has been pledged, as has an equal amount for endowment. The new building will face Lake Michigan and have 640 feet frontage on Groveland Park.

Tuberculosis in Chicago.—There are 10,977 cases of pulmonary tuberculosis under medical supervision in Chicago, according to Dr. Jacob J. Mendelsohn, physician in charge of the Stock Yards Dispensary of the Municipal Tuberculosis Sanitarium. Of this number 2,541 are under the care of private physicians. Beds available in tuberculosis institutions in the vicinity of Chicago total only 2,268. A large part of the tuberculosis problem rests therefore on dispensaries. There are eight full-time Municipal Tuberculosis Sanitarium dispensaries in the city, having twenty-three physicians and 135 field nurses, who cooperate with the health department, physicians, employers and other recognized agencies. The number of new cases examined is increasing, having been in 1920, 16,500; 1922, 31,854, and 1924, 32,460.

INDIANA

Conference of Health Officers.—The thirty-first annual conference of city, town and county health officers was held at Indianapolis, May 12-13, under the auspices of the state board of health. Among the subjects discussed were the Dick test in scarlet fever, stream pollution, supervision of milk supplies, the full-time county health unit, diphtheria prevention and quarantine. The speakers included Dr. John A. Ferrell, medical director, International Health Board, New York; Dr. Herman N. Bundesen, commissioner of health of Chicago, and Dr. Richard A. Bolt, U. S. Children's Bureau, Washington, D. C.

IOWA

State Medical Election.—At the seventy-fourth annual meeting of the Iowa State Medical Society, Des Moines, May 15, Dr. Smith A. Spilman, Ottumwa, was elected president; Dr. Thomas E. Powers, Clarinda, president-elect; Drs. Frank C. Mehler, New London, and Frederick G. Murray, Cedar Rapids, vice presidents; Dr. Tom B. Throckmorton, Des Moines, secretary, and Dr. Addison C. Page, Des Moines, treasurer.

KANSAS

State Medical Election.—At the annual meeting of the Kansas Medical Society, May 5-7, at Topeka, the following officers were elected: president, Dr. Francis A. Carmichael, Osawatomie; vice presidents, Drs. Benjamin F. Morgan, Clay Center; Joseph E. Hawley, Burr Oak, and Francis H.

Smith, Goodland; treasurer, Dr. George M. Gray, Kansas City. The next meeting will be held at Kansas City, May 4-6, 1926.

LOUISIANA

Suit to Close New Orleans Markets.—The attorney general filed suit in the civil district court, New Orleans, April 28, against the mayor and commission council, commanding them to close down thirteen public markets and to provide properly equipped sanitary buildings in their stead, thus bringing to a head the campaign of the state board of health to secure sanitation in the markets of New Orleans.

Tuberculosis Hospital for New Orleans.—It has been announced that the John Dibert Tuberculosis Hospital, costing $400,000, will be erected at once at Tulane and Claiborne avenues, New Orleans, and turned over to the Charity Hospital to be administered. The announcement followed an agreement, completed May 4, whereby the Charity Hospital Board accepted the offer of the trustees of the Dibert Fund. The new hospital will be, therefore, a state institution. Nine years ago, Mrs. Dibert created a fund of $330,000 for a tuberculosis hospital which was to be a memorial to her husband. The fund now amounts to more than $400,000.

MARYLAND

School of Hygiene Drops B.S. Degree.—The degree of bachelor of science in hygiene will not be given after this year at the Johns Hopkins School of Hygiene and Public Health. The elimination of this degree will make the institution virtually a graduate school. Although conforming to the policy announced by the university last winter, Dr. William H. Howell, assistant director, said the step was taken largely to meet conditions outside rather than to follow the general scheme proposed by the president. This is the third step in the return of Johns Hopkins to its original standard as a graduate institution, the previous ones having been the proposal at Homewood to drop the first two years of college work and with them the A.B. degree (practically eliminating the College of Arts and Sciences), and the decision of the medical school to admit only those highly prepared. The degree of bachelor of science in hygiene was originally to train public health workers. Student candidates with two years of college work were instructed in special subjects for two years more at the School of Hygiene and Public Health, making the course four years in all. There have been a limited number of openings for the bachelors of science in hygiene, and therefore an increasingly smaller number of candidates for the degree. The new School of Hygiene will move into its new building in the hospital group about October 1. The celebration will be delayed until 1926, when the university observes its fiftieth anniversary.

MASSACHUSETTS

New Chairs in Chemistry.—The Theodore W. Richards professorship in chemistry has been established at Harvard University, Boston, by Thomas W. Lamont, New York banker, and Gregory P. Baxter, Ph.D., professor of chemistry at Harvard since 1897, has been appointed the first incumbent. A second new chair in chemistry has been announced—the Sheldon Emery professorship of organic chemistry—to which Prof. Arthur B. Lamb has been appointed.

Another Boston Health Unit.—The trustees of the George Robert White Fund have selected a site for the new health unit in East Boston at Paris and Emmons streets. Construction work will begin, June 1. The structure will be of red brick and limestone, of Georgian design, two stories and a basement. The offices, rest rooms and waiting room for children connected with the eye, posture and dental clinics will be on the first floor, the entire rear portion of which will be used for clinics for babies, preschool children and prenatal work, and a fluoroscopic room and laboratory. On the second floor will be offices of various societies and organizations engaged in public health work in the district, an auditorium seating more than 200 persons, and a motion picture booth. The new health unit will involve an expenditure of about $230,000.

MICHIGAN

Impostor Sentenced.—Jules H. Stean, Detroit, was sentenced to from seven and a half to fifteen years in the state house of correction at Marquette, May 5, following his conviction in the circuit court of manslaughter in connection with an illegal operation. Stean, it is reported, posed as a licensed physician.

Chiropractic Bills Defeated.—Two bills to create separate chiropractic boards of examiners were introduced in the legislature, which adjourned May 2. They never came out of the committees. During the last days of the session, the chiropractic lobby endeavored to secure immunity for chiropractors by introducing a bill repealing the provisions of the present medical practice act in so far as it applied to chiropractors and other cults. That bill also died in the committee.

State Society's Clinic Program.—The Michigan State Medical Society conducted a tuberculosis clinic at St. Joseph, May 5. A councilor district clinic was conducted by the state society in Muskegon, May 14, and other clinics will be held in Ionia, Saginaw and Battle Creek in June. Twelve district clinical conferences have been conducted since January 1. Four clinics will be conducted in the Upper Peninsula during July. The profession has endorsed by large attendance this feature of the state society's activity.

Sanitation of Swimming Pools.—In the first quarter of this year, 311,322 bathers used the swimming pools of Detroit; eighteen out of twenty-eight pools met the sanitation requirements of the department of health. In March, twenty-three out of twenty-eight pools met these requirements. In the first ten months of last year, only six out of twenty-five met the requirements. The improvements in sanitation have not been due to any changes in equipment but to improved methods of operation and perhaps monthly reports in which the relative standing of pools was published. The average number of bacteria per cubic centimeter in these pools during the first quarter of this year was 1,198, and in the first ten months of last year 4,896, while the percentage of samples examined showing the presence of *Bacillus coli* was 20.33 and 34.3, respectively.

Personal.—Dr. James D. Bruce, Saginaw, who has been appointed director of the medical department of the university medical faculty and physician-in-chief to the University Hospital, Ann Arbor, assumed his new duties, May 1.——Dr. Frederick W. Robbins, Detroit, announces that he will retire from active practice, June 1.——Dr. Frederick C. Warnshuis, Grand Rapids, has been promoted to the rank of colonel, Medical Officers Reserve Corps.——Dr. William M. Dobson is now in charge of the U. S. Veterans' Bureau Hospital No. 100 at Camp Custer, succeeding Dr. Frank E. Leslie, who recently went to Chicago. Dr. Dobson's previous assignment was at Camp Sherman, Chillicothe, Ohio.——Dr. Charles W. Ash has been appointed a member of the board of health of Bay City for a term of three years, to succeed Dr. Matthew R. Slattery, resigned, and Dr. James W. Gustin and Dr. George W. Moore have been reappointed for four and two years, respectively.——Dr. Starr K. Church, has been elected city health officer of Marshall, to succeed Dr. Henry A. Shurtleff.——Dr. Harvey E. Hoffman was appointed city health officer of Ludington, May 4, for the tenth consecutive time.——Dr. George W. Moore was elected health officer of Bay City, and secretary of the board of health, May 2, to succeed Dr. John A. Keho.

MINNESOTA

Compensation for Typhoid Carriers.—The last legislature appropriated $6,000 to pay claims arising after July 1, allowed to certain persons who have been declared typhoid carriers by the state board of health and to provide for the compensation of such persons in certain cases. Since 1913, 129 typhoid carriers have been identified by the Minnesota State Board of Health. They are known to have been responsible for 616 cases of typhoid fever, and forty-one deaths have been traced to them; nine of these carriers have died since their identification. The largest number (fifty-two) of these carriers in one class were housewives, and the second largest number (eighteen) were dairy workers. Seventeen dairy workers, five restaurant or boardinghouse keepers, six housekeepers, four cooks and three nurses are prohibited from continuing their chosen occupations, and all carriers are forbidden to engage in handling milk products or other food liable to be eaten without being cooked.

Court Upholds Examination of Pupil.—The district court of Hennepin County, Minnesota, handed down a decision, April 27, upholding the regulations of the board of education, Minneapolis, with regard to the examination of a pupil suspected of an infection of the throat. The decision was ren-

dered in answer to a petition for mandamus to compel the school principal to readmit without examination the child that had been excluded from attendance on account of a sore throat. The plaintiff was a Christian scientist who had objections to an examination by a physician and also to the taking of throat cultures as required by the regulations. The court held that the exclusion of the pupil till such time as she and the plaintiff complied with the rules of the board was legal and valid and necessary for the protection of the health of the other pupils in attendance at the school. The writ of mandamus was set aside and the defendant was given judgment against the plaintiff for costs.

MISSISSIPPI

State Medical Meeting.—At the fifty-eighth annual meeting of the Mississippi State Medical Association, Biloxi, May 12-14, Dr. Giles S. Bryan, Amory, was elected president; Drs. Franklin G. Riley, Meridian, and Oscar N. Arrington, Brookhaven, vice presidents; Dr. Thomas M. Dye, Clarksdale, secretary, and Dr. James M. Buchanan, Meridian, treasurer. The next meeting will be held at Jackson, in 1926.

MISSOURI

Protest Against Political Appointments.—Another member of the eleemosynary board, Mr. Charles E. Rendlen, Hannibal, has resigned as a protest against political appointments in the eleemosynary institutions. The state medical association, at its annual meeting, Kansas City, May 5-7, adopted a resolution protesting against the spoils system being reintroduced in the eleemosynary institutions.

State Board Resumes Hearings.—The state board of health, May 11, resumed the trial of physicians said to have been licensed in Missouri through fraud or other irregular means. The board found Dr. Archibald M. Ecklund, St. Louis, guilty of making a false affidavit in obtaining his license; his license was revoked, as were those of Frederic W. Brownfield, St. Louis, and Spurgeon H. Barnett, city bacteriologist, St. Louis. Charges were dismissed for lack of proof of any fraud against Nicholas J. Scotellaro, Cyril H. Rogers, William V. J. Koutsompous, Frederick J. Killalee, Oscar R. Bullard, the brothers, Alonza G. and Clarence L. Hobbs, and Loren A. Glasco, Whitewater.

NEW JERSEY

Manufacturers to Build Hospitals.—The Manufacturers' Association of New Jersey announced at its eleventh annual convention, Atlantic City, May 1, that it would establish six hospitals in the state to care for injured workmen. They will include the present hospital at Newark, owned by the New Jersey Casualty Company, which will be purchased, and others to be constructed at Paterson, Trenton, Jersey City, Camden, and some city to be designated. The president pointed out that this course was to be undertaken to offset the increasing cost of medical treatment for compensation. He said, it is reported, that from 1917 to 1922 the proportion of medical fees to the premiums paid in these cases increased from 9.1 to 21.6 per cent., and that in 1922 the increase in premiums collected was $450,000 over that of 1917, while the increase in medical payments amounted to $750,000.

Society News.—Dr. John H. Stokes, professor of dermatology and syphilology, University of Pennsylvania School of Medicine, Philadelphia, addressed the Atlantic County Medical Society, Atlantic City, April 17, on "Lesions of the Mucous Membranes," and Dr. George Draper, associate in medicine, Columbia University College of Physicians and Surgeons, New York, on "Observation of the Relation of Human Constitution to Disease with Lantern Slide Demonstration."——Dr. Randle C. Rosenberger, professor of bacteriology and preventive medicine, Jefferson Medical College, Philadelphia, addressed the Camden City Medical Society, Camden, April 7, on "Bacteriology and Prophylaxis of Lobar Pneumonia."——Dr. Lucius F. Donohoe, acting president of the Medical Society of New Jersey, addressed the Cumberland County Medical Society, Bridgeton, April 7, on "Medical Ethics."——Dr. Charles A. Elsberg, New York, addressed the Hudson County Medical Society, Jersey City, April 7, on "Experience in Diagnosis of Surgical Treatment of Tumors of the Brain."——Dr. Joseph Sailer, Philadelphia, addressed the Mercer County Medical Society, Trenton, April 8, on "Physical Examination of the Heart with the Treatment of Cardiac Decompensation."——Dr. John L. Kantor, New York City, addressed the Passaic County Medical Society, Paterson, April 9, on "A Clinical Study of Common Anatomic Anomalies of the Colon."——Dr. George M. Golden, Philadelphia, addressed the Salem County Medical Society, Salem, April 8, on "Practical Bedside Observations in Pneumonia."

NEW YORK

Two Chiropractic Schools Close.—As a result of court actions, the American College of Chiropractic and the Interstate Chiropractic School, both of Buffalo, have closed their doors. The judge directed the jury to acquit the defendants in the latter case, but the faculty has been rearrested and will be tried again for granting diplomas without authority. The judge in the latter case not long ago write a testimonial for a naturopath.

Percentage of Physicians Insured.—The counsel for the Medical Society of the State of New York is amazed at the fact that only 49 per cent. of the physicians in the so-called metropolitan district in and about New York are protected against lawsuits in the group plan of insurance which the state medical society has inaugurated for them. There are 3,241 physicians in that district who do not carry group insurance protection.

Society News.—The Utica Academy of Medicine has been organized by physicians of that city for the advancement of medical science.——A special meeting on "Convalescent Care" will be held, June 4, at the New York Academy of Medicine under the auspices of the public health committee of the academy and the hospital information bureau of the United Hospital Fund.——New York City has been selected for the meeting of the State Conference of Charities and Corrections, December 8-11.——Dr. Thomas J. Harris, New York, was recently elected president of the American Otological Association.——The Brooklyn Dermatological Society has recently been organized.——The scientific program of the section of medicine, New York Academy of Medicine, May 19, was given by members of the staff of Johns Hopkins Hospital, Baltimore.——The Association of the Alumni of the College of Physicians and Surgeons will meet, May 26, at the university. Lieut.-Col. William G. Schauffler, U. S. Army Air Service, Washington, D. C., will give an illustrated address.

New York City

Mayor Hylan Vaccinated.—At the request of the health commissioner, Mayor Hylan of New York City was vaccinated against smallpox, May 15.

Prize for Synthetic Opium.—Herman A. Metz announced, May 15, the offer of a prize of $100,000 to the first person who invents a process for producing synthetic opium at a price low enough to wipe out the poppy industries of India and China. The winner shall give up his rights to the process, permitting it to be used under conditions laid down by international agreement.

Personal.—John H. Finley, LL.D., associate editor of the New York *Times*, will give the commencement address, June 15, at the University of Michigan, Ann Arbor.——Dr. Harry A. Pattison, supervisor of medical service of the National Tuberculosis Association, has been given a year's leave of absence, beginning September 1, to serve as director of the Ida Potts Memorial Hospital, Inc., at Livingston, and Dr. John A. Smith, formerly secretary of the state department of health of New York State, has been appointed a member of the staff of the medical service of the association.——A dinner was given in honor of Dr. Frederic Brush, medical director of the Burke Foundation, at the recent anniversary of the opening of the institution. He was presented with a set of bronzes.——Dr. M. A. Goldzicher, professor of pathology at the University of Budapest, has come to New York to engage in research work.

Memorials at the New Presbyterian Hospital.—Mr. and Mrs. Jeremiah Milbank have donated $100,000 to the Presbyterian Hospital for a recreation roof and gymnasium, to be known as the "Margaret Schulze Milbank Memorial," and $72,000 for a twelve bed ward in memory of the wife of Dunlevy Milbank.——The sum of $200,000 has been given in memory of Dr. Andrew J. McCosh, for many years chief surgeon at the hospital. Half of this fund will be used for the Andrew J. McCosh Operating Amphitheater.——Friends have given a twelve bed ward in honor of the late Dr. Francis P. Kinnicutt.——The entrance court, valued at $35,000, has been donated by Mrs. William Sloane in memory of the late William Sloane, former president of the institution.——Mr. and Mrs. Middleton S. Burrill have given $72,000 in memory

of their three children.——Thirty-four gifts as memorials have been established in the new building, ranging from $5,000 (the value of a single ward bed) to $1,500,000 for a private pavilion which will be built by Mrs. Stephen V. Harkness and Edward S. Harkness in memory of the late Stephen V. Harkness.

NORTH CAROLINA

Resolutions of State Society.—With a registration exceeding all previous sessions (541 men and 140 women), the Medical Society of the State of North Carolina held its seventy-second meeting in Pinehurst, April 27-29. The address of the president, Dr. Albert Anderson, included a special plea for a whole-time secretary for the society. A proposition to pay $2 per member to the *Southern Journal of Medicine and Surgery*, in return for which the journal should print the papers and minutes of the society and should be sent to each member of the society, met with an unfavorable response. Seventy papers and addresses were on the program, the large majority being presented and discussed. Resolutions were adopted appreciative of Mr. J. B. Duke for establishing the Duke Foundation, and asking the state board of health to cooperate in every feasible way with the foundation. Other resolutions regretted the conviction of physicians for felonies, and urged the state board of medical examiners to rescind the license of physicians who are guilty under the North Carolina statutes of grossly immoral conduct. Drs. Cyrus Thompson, Jacksonville, and David A. Stanton, High Point, members of the North Carolina State Board of Health, were reelected for terms of six years. The session of 1926 will be held in Wilmington.

OHIO

Licenses Revoked and Suspended.—According to the Ohio State Medical Journal, the state medical board revoked the license of Dr. Charles S. Emery, Toledo, April 7, on a charge of having been convicted of performing a criminal operation, and suspended the license of Dr. L. F. Overholse, Portsmouth, for sixty days for association with an unlicensed practitioner. Dr. Overholse was instructed to cease such relationship and to report to the board at the July meeting.

Distribution of Medical Service.—A study of medical service in Ohio was made recently by the committee on medical economics of the Ohio State Medical Association. It was found that there are about 700 people for each physician in the state, which is less than the average for the United States (765). The committee found that fifty-eight of the eighty-eight counties in Ohio showed a decline in the number of physicians for the biennium ending with 1922; twenty-two counties showed a gain, and eight remained the same. The decline in fifty-eight counties is evidence, the committee says, of the gradual reduction in the number of physicians serving rural areas.

Report of Committee on Medical Defense.—During 1924, fourteen suits were filed with the committee on medical defense of the Ohio State Medical Association. The association assumed the defense in four instances, and the physicians were protected by insurance in ten instances in which the association cooperated when requested. A tabulation of the work of this committee by years shows that the actions have totaled about $1,000,000 in damages claimed. The total number of suits since 1916 has been 111 and there have been eighty-five threats. Adequate legal defense and funds to meet the court costs of the malpractice suit are provided in the Ohio plan, but not funds to meet judgments.

Resolution on Opium.—In accordance with a request from the house of delegates of the state medical association, the committee on mental hygiene investigated a resolution submitted to the house favoring the "total extirpation of the opium plant . . . except as found necessary for medicine and science in the judgment of the best medical opinion of the world." The resolution was offered at the instance of the White Cross International Anti-Narcotic Society, whose literature the committee carefully studied. It endeavored also to secure all data bearing on this problem. After due consideration, the committee recommended to the council that the resolution be laid on the table. The council approved.

The Academy of Medicine of Toledo and Lucas County.—This society dedicates the May issue of its *Bulletin* to its own building, a modern brick, two story and basement structure at Monroe and Fifteenth streets, Toledo, which the county society owns. On the first floor are the offices of the society, four other offices for rental purposes, and three large rooms which will be the library. On the second floor is an auditorium with a capacity of 600.——Dr. James A. Duncan presented to the library in April more than 700 volumes, reports and journals.——Dr. Henry F. Helmholz, Rochester, Minn., addressed the society, May 1, on "Diagnosis and Treatment of the Various Forms of Pyelitis."——A memorial service in memory of the late Dr. Frank Jacoby, a member of the Academy of Medicine of Toledo and Lucas County, will be held, May 21, in the nurses' home, St. Vincent's Hospital.

PENNSYLVANIA

Society News.—Dr. Grover W. Wende, professor of dermatology and syphilology, University of Buffalo Medical Department, addressed the Westmoreland County Medical Society, Greensburg, recently on "The Diagnosis of Syphilis and the Common Skin Diseases," illustrated with slides, and Dr. Joseph H. Barach, Pittsburgh, on "Hypotension." The annual clinic of this society will be held in Latrobe under the auspices of the Latrobe Academy of Medicine, June 17. Dr. Nelson G. Russell, professor of clinical medicine, and Dr. James E. King, professor of gynecology, University of Buffalo Medical Department, will conduct the clinic.

Tri-State Water Treaty.—Commissioners representing Pennsylvania, New York and New Jersey signed a compact recently to negotiate a treaty concerning the use of the waters of the Delaware River. Dr. Charles H. Miner, secretary of health, was chairman of the Pennsylvania commission. The compact states that the highest use of this source of water is for public water supplies, and requires the treatment of sewage and industrial waste before passage into the river. The water above Port Jervis was equally divided among the three states, and below that point between Pennsylvania and New Jersey. Each state's share, however, is reduced in the treaty in proportion as the water is diverted from its tributaries. The treaty provides for dams across the river for power purposes. The compact has been given to the governors of the three states for transmittal to the legislatures for approval.

Philadelphia

Jefferson's Anniversary.—The one hundredth anniversary of the founding of Jefferson Medical College will be celebrated, May 29, at an alumni dinner at the Ben Franklin Hotel. Surg.-Gen. Merritte W. Ireland and others will speak. More than forty classes have signified their intention to take part in the celebration.

Research Institute Opened.—The new research institute of the Lankenau Hospital, a gift from Rodman Wanamaker, has been placed in operation. To date, ten rooms have been equipped with separate accommodations for bacteriology, physiology, pathology and serology, and one floor to accommodate animals. Dr. Stanley P. Reimann is director of the institute. Eighteen specialists will comprise the staff.

The Smallpox Situation.—More cases of smallpox occurred in Philadelphia this year up to May 1 than in any year since the epidemic which started in 1901. In the 150 cases reported there were eighteen deaths. It is believed that the situation is now under control; 250,000 persons have been vaccinated in the last few weeks.——Figures cited by Dr. Andrew A. Cairns, chief medical inspector of the Bureau of Health, May 13, indicate that the smallpox outbreak in Philadelphia originated in Camden. Up to May 9 there had been 102 cases of smallpox in Camden, with thirty-six deaths, and there were 132 cases and thirty-five deaths in that city from June 10 to Dec. 31, 1924. Health records disclose no cases of smallpox in surrounding Pennsylvania counties.

UTAH

State Diagnostic Laboratory.—A new diagnostic laboratory, under the control of the state board of health, has been established at the state capital. It was planned to make available laboratory diagnosis for all physicians of the state. Outfits for shipping specimens will be furnished on application. The state board has issued a booklet which explains the service rendered.

VIRGINIA

The Oldest Mental Hospital.—The oldest hospital in the United States used exclusively for the insane, according to *Hospital Management*, is the Eastern State Hospital, Williamsburg. This hospital was incorporated in 1768, patients were first admitted in 1773, and it is still in operation. There are about twenty-five buildings on the grounds.

WISCONSIN

Fellowship for Research on Vitamins.—An industrial fellowship ($3,200) has been presented to the University of Wisconsin by the Quaker Oats Company of America to seek impartial data on vitamins in cereal grains and their products. It will become effective July 1.

Ruling of State Board.—The state board of medical examiners recently ruled that a physician in Wisconsin cannot secure the services of a physician from another state to take over his practice temporarily unless the locum tenens is licensed in this state. No temporary permits will be granted.

Committee to Select Health Officer.—The board of health, Madison, has appointed an advisory committee to aid in selecting a city health officer to succeed Dr. Errol V. Brumbaugh, who recently resigned to accept a position with the health department of Milwaukee. The members of the committee are Drs. William D. Stovall, William F. Lorenz and Joseph Dean.

Iodized Salt May Be Sold.—Under the state pure food acts in Wisconsin, iodized salt has been considered an adulteration permitted by law and thus salable only as a drug. A ruling of the state attorney general, in April, holds that, while salt with sodium iodid added is not legally salable as salt, it is legally salable when sold as a mixture or compound under a coined name that will clearly indicate to the public its special nature.

CANADA

First Summer Course for Medical Students.—The dean of the Medical College of the University of Western Ontario, London, has announced a special clinical summer course for the senior students of the college. The course will provide clinical conferences and lectures in surgery, medicine and gynecology. No academic credit will be given, but the students will be exempted from an equal period of time from clinical clerk service during the following winter term.

Public Health.—The department of health of New Brunswick has secured the services of Dr. George J. Wherrett for one year to institute and conduct an antituberculosis campaign, which will include instruction in methods of avoiding infection and the establishment of clinics for diagnosis and treatment. The Canadian Social Hygiene Council has sent Dr. Leon A. Pequegnat into the province for a limited time to create popular interest in the curtailment of venereal disease. He will work in conjunction with Dr. Wherrett, under the auspices of the Public Health Association of New Brunswick.

GENERAL

Political Removals.—The American Association for the Study of the Feeble-Minded, in session at Raleigh, N. C., recently, unanimously adopted the following resolution:

> This association desires to go on record as condemning the political trend of supposed modern and economic governments in the practice of relieving men who are by nature qualified through experience and special training in this line of work and removing from the superintendency of state institutions the same for political purposes only.

Drs. Abel and Noguchi Honored.—At a meeting of the Association of American Physicians, May 6, Washington, D. C., the award of the Kober Lectureship was presented to Dr. John J. Abel, professor of pharmacology, Johns Hopkins University Medical Department, Baltimore, and the Kober Association Medal to Dr. Hideyo Noguchi, Rockefeller Institute for Medical Research, New York.

Summer Scientific Meetings.—The American Association for the Advancement of Science will hold summer meetings, organized by the Southwestern Division, at Boulder, Colo., June 9-11, and meetings of the Pacific Division at Portland, Ore., June 17-20. These meetings are open to all association members. Correspondence should be addressed to Roscoe P. Johnston, 306 Goodrich Building, Phoenix, Ariz., and to Barton W. Evermann, Ph.D., California Academy of Sciences, Golden Gate Park, San Francisco, secretaries, respectively, of these divisions.

New Editor.—Henry T. Moore, Ph.D., of the psychologic department of Dartmouth College, has been appointed to succeed Floyd H. Allport, Ph.D., resigned, on the editorial staff of the *Journal of Abnormal and Social Psychology*. All editorial communications, articles and books for review should be addressed to Professor Moore, Dartmouth College, Hanover, N. H. Dr. Allport will continue to be affiliated with the journal in the capacity of an associate editor. The name of the journal has been changed to the *Journal of Abnormal and Social Psychology*.

Committee Studying Occult Phenomena.—The University of Vienna appointed in 1923 a committee of eight professors, including Dr. Wagner-Jauregg and an engineer, to investigate certain persons claiming occult powers. One who exhibited surprising phenomena was investigated in the physics institute of the university. His occult procedures were found to be tricks. Another absolutely refuses to submit to the tests. The third has presented a number of phenomena of the telekinetic type but not under conditions guaranteeing their authenticity. These the medium rejects. The committee therefore has presented its report and asked to be discharged.

Conference on Physical Education.—The Bureau of Education of the Department of the Interior called a conference, May 7-8, at Washington, D. C., of representatives of institutions giving professional training in physical education. The commissioner of education, John J. Tigert, LL.D., said that the number of schools training teachers of physical education was now more than 100, including more than fifty of the leading universities and colleges. A resolution was passed asking the council of the American Physical Education Association to arrange for a survey and classification of training schools for teachers of physical education, to be performed by a commission working in cooperation with the bureau of education. More than half of the representatives of schools at the congress were physicians.

American Health Congress in 1926.—The National Health Council has planned an American health congress, to be held at Atlantic City the week of May 17, 1926, to give health workers of the country the broadest possible view of the public health movement. Leading authorities on each phase of public health work will present programs for the solution of public health problems. The fourteen member groups of the National Health Council will cooperate in the congress. Several national organizations will hold their regular biennial meetings at Atlantic City during this week, and the General Federation of Women's Clubs will meet directly after the congress. The steel pier has been engaged for headquarters, meetings and commercial and educational exhibits. Censorship will be exercised, so that exhibits will conform to high standards.

Recommendation of Committee on Trachoma.—A survey of all government Indian reservations for the purpose of making a record of Indians suffering with trachoma has been begun by the Department of the Interior. The action was taken as a result of a conference with an advisory council on trachoma appointed by the American Medical Association, and composed of Dr. William H. Wilder, Chicago, chairman; Dr. Arnold Knapp, New York, and Dr. William Campbell Posey, Philadelphia. This committee recommended the survey which will be conducted by physicians of the Indian Service stationed at the various agencies. It provides for a permanent record of every Indian suffering with trachoma, including sex and age and the status of the disease, the housing conditions and hygienic surroundings of the Indian family. After the records have been completed, trachoma specialists will be sent to each reservation to treat these patients. Included in the plans of the American Medical Association committee is an educational campaign to teach the Indians the mode of transmission, and the means of preventing trachoma. In order to comply with this recommendation, the first weeks in May and October have been designated as Educational Trachoma Week on the reservations. During this seven-day period, twice a year, lectures by physicians and superintendents will be made daily to Indians, instructions will be given in the Indian schools to pupils and adults, and papers will be prepared by the Indian students in the higher grades on trachoma. The missionaries at the agencies have been invited to cooperate with the government in the program.

Society News.—At the meeting of the American Society for Clinical Investigation, May 4, Dr. Charles C. Bass, dean and professor of experimental medicine and director of the laboratories of clinical medicine, Tulane University of Louisiana School of Medicine, New Orleans, was elected president; Dr. Eugene F. Du Bois, associate professor of medicine, Cornell University Medical College, New York, vice president; Dr. J. Harold Austin, professor of research medicine, University of Pennsylvania School of Medicine, Philadelphia,

secretary, and Dr. David P. Barr, St. Louis, treasurer.——Dr. Ernest Sachs, St. Louis, has been elected president of the Society of Neurological Surgeons; Dr. Howard C. Naffziger, San Francisco, vice president, and Dr. Francis C. Grant, Philadelphia, secretary-treasurer. The next meeting will be in Rochester, Minn., in October.——At the annual meeting of the American Association of Genito-Urinary Surgeons, Washington, D. C., May 5, Dr. William F. Braasch, Rochester, Minn., was elected president; Dr. James A. Gardner, Buffalo, vice president, and Dr. Henry G. Bugbee, New York, secretary-treasurer.——The National Federation of Day Nurseries will convene, June 3-5, in Chicago.——The American Association of Hospital Social Workers will meet in Denver, June 8-13.——The American Child Health Association will hold its annual conference in Chicago, June 22-26.——The American Jewish Physicians' Committee will meet at the Hotel Breakers, Atlantic City, May 26, 8:30 p. m. A report will be given on the last three years' progress toward the establishment of the medical department of the Hebrew University in Palestine.——The thirtieth annual meeting of the American Academy of Ophthalmology and Otolaryngology will be held in Chicago, October 19-24, with headquarters at the Hotel Sherman. Professor Nager, Zurich, Switzerland, the guest of honor, will address the academy Wednesday on "Histology of Congenital and Acquired Deafness." An added feature this year will be round table discussions, held during the luncheon hours. Communications should be addressed to the secretary, Dr. Luther C. Peter, Chestnut and Twentieth streets, Philadelphia. The National Board of Examiners in Otolaryngology and the American Board for Ophthalmic Examinations will hold their examinations, Monday, October 19.——At the annual meeting of the American Society of Tropical Medicine, Washington, D. C., May 5-6, Dr. Henry R. Carter, Washington, D. C., was elected honorary president; Col. Joseph F. Siler, U. S. Army, president; Drs. George C. Shattuck and Charles S. Butler, U. S. Navy, Boston, vice presidents; Brayton H. Ransom, Ph.D., Washington, D. C., secretary-treasurer, and Major Henry J. Nichols, U. S. Army, editor.

FOREIGN

American Hospital Given to Reims.—Reims, France, April 30, received the gift of the American Memorial Hospital for Children as a fulfilment of a promise from American woman made in 1919. Ambassador Herrick formally turned over the institution to the municipality.

Decision of Vienna Sanocrysin Committee.—The *Münchener medizinische Wochenschrift* relates that the Sanocrysin Committee of Vienna finds the "Sanocrysin" treatment drastic—"cingreifend"—and not without danger, and demands further scientific research and observation before its adoption for hospital use. The attitude toward the treatment in Sweden and Switzerland is skeptical.

Disciplinary Tribunal in the Profession in the Netherlands.—For twenty years the Netherlands Medical Association has had a special council to discipline members for infractions of the code of ethics, but the severest penalty that could be enforced was dropping from membership in the association. A bill has been presented in parliament by the minister of labor providing an official status for a disciplinary tribunal for physicians, dentists and midwives, with a penalty of temporary or permanent loss of the right to practice. Our exchanges approve the bill, but warn that it is indispensable for the tribunal to be composed of members of the profession.

Deaths in Other Countries

Because of painful incurable illness, Prof. **Demeter von Tabora** in Frankfurt-on-the-Main, with his wife, committed suicide, April 14. Von Tabora was for a long time Moritz' assistant in the medical clinics in Giessen and Strasbourg, and noted for work on the physiology of the heart. He was 48 years old.——Dr. **Oskar Witzel**, director emeritus of the Düsseldorf Academy of Practical Medicine, and noted for his method of gastrostomy, aged 58.

CORRECTION

Colon Vaccines for High Blood Pressure.—The author, J. W. Bicak, advises that the following sentence in the abstract of his paper published in THE JOURNAL, May 9, p. 1454, "The vaccine was given in the mildest cases only," should read, "The mildest cases were given the vaccine only."

Foreign Letters

LONDON

(From Our Regular Correspondent)

May 9, 1925.

Psychiatrists' Evidence Before the Lunacy Commission

At the Royal Commission on Lunacy and Mental Disorder, a sitting was devoted to a memorandum of evidence and recommendations of a committee of the Medico-Psychological Association of Great Britain and Ireland. Many prominent members attended to answer questions of the commission. For the association it was stated that the protection afforded by the lunacy acts had, on the whole, proved satisfactory. Those acts, however, failed to keep pace with medical progress, especially in regard to the treatment of the initial and more curable type of mental disorders. The association hoped that the investigation would show the government the necessity of proceeding with a mental treatment bill in harmony with the aspirations of that association. The association held that clinics for mental disorders, preferably in connection with the universities, medical schools and general hospitals, should be established; that a considerable proportion of admissions to mental institutions should be voluntary; that special legal machinery should be devised for treating early cases; that a "provisional order" should be instituted as an intermediary measure before the usual "judicial order" for detention is enforced; and that, when such detention is necessary, medical certification should constitute evidence, but that the authority for detention, discharge and continuation orders should entail the responsibility of some authorized person not acting in a medical capacity; that the Poor Law authorities should be superseded by the local authorities in regard to the care, treatment and maintenance of necessitous patients suffering from mental disorders.

There was a long discussion between the experts and the chairman with regard to the clinics. The point at issue was as to how far "voluntarism" was possible and whether a patient who offered himself for treatment voluntarily was not necessarily so mentally affected as to make his offer legally unacceptable. Dr. Menzies contended that this was a phase of mental treatment growing so rapidly that, if Lord Onslow's bill was passed, in ten years, 50 per cent. of his patients would be voluntary. He further contended that the fact of having voluntary treatment in a mental institution would leave no more stigma on the patient than would treatment for any other ailment. The chairman said that the commission was convinced of the desirability of these clinics, of their being associated with but separated from the general hospital, and of the treatment of patients for some time without certification. It also agreed that it was desirable to remove detention from the mental hospital, as far as possible, and to assimilate the atmosphere of the general hospital. But the question was how it was to be done. He thought the witnesses were optimistic in thinking that voluntary residence in an institution would leave no stigma.

New Regulations for Death Certification

The text has been issued of a bill to render the law as to certification of death at once simple and complete, so as to leave no room for certification on insufficient information, and to eliminate as far as possible all risk of premature burial or failure to detect crime. With this object, provision is made for medical inspection of the dead body in all cases before certification of death, and for adequate inquiry before certification of its cause. Stillbirths must be certified and registered. Provision is also made to insure the orderly disposal of the dead and to prevent retention of dead bodies

before disposal in those cases which are not already covered by the public health acts.

Air Pollution in London

The report of the health officer of the city of London for 1924 has just been issued. Dealing with the question of smoke and atmospheric pollution, a table is given showing the amounts of insoluble matter—tar, soot and dust—found in the air; also the soluble matter, with the sulphates, ammonia and chlorin. It is pointed out that, in July only, the deposit registered as falling in the city amounted to 20.96 tons per square kilometer, which is equal (estimating the city as having an area of one square mile) to no less than about 53 9/10 tons avoirdupois. Of this mass of dirt approximately 24 9/10 tons was soluble, and included the chemicals mentioned, and 28 7/10 tons was insoluble and consisted of tar, carbon and grit. In addition, a daily observation had been made at midday at Guildhall of the purity of the air by a modern dry method, by which the suspended matter could be readily demonstrated. From January 1 until December 31, the amount of the impurity at noon had varied from 0.5 mg. to 6 mg. per cubic meter of air; the latter figure included times when there had been a fog. Commenting on this, the health officer adds: "For many years it has been increasingly obvious that the use of electricity and gas for heating and cooking is contributing to the diminution of the nuisance from smoke."

The Smallpox Menace

As repeatedly pointed out in previous letters, the widespread neglect of vaccination in this country has rendered smallpox a serious menace. It has already been attended by a considerable increase in the number of cases and by several serious outbreaks. In the House of Commons, the parliamentary secretary of the ministry of health was interrogated concerning the situation. He replied: The total number of cases of smallpox notified in England and Wales during the twelve weeks from January 4 to March 28 was 1,609. The recent increase in the number of cases may be attributed to the neglect of vaccination in many of the invaded districts, and to neglect of the precautions that are essential if the spread of the disease is to be checked. Fortunately, the disease is of a mild type. Vaccination is the only reliable protection against it. The concluding statement was received with cries of "rubbish" from the labor party. Curiously, in this country this party shows an affinity for the various antiscientific cranks, such as osteopaths, antivivisectionists and antivaccinationists.

The Work of the Radium Institute

The Radium Institute has been in existence fourteen years. In that period, 14,500 patients have been treated. The fruit of this great experience is about to be published in a book entitled "A Clinical Index of Radium Therapy," by Mr. Hayward Pinch, the medical superintendent, with the assistance of Dr. Mottram, director of the pathologic laboratory, and Mr. W. L. S. Alton, director of the chemicophysical laboratory. Copies of this volume will be given to applicants, but will not be placed on sale. The general conclusion reached is that great symptomatic relief and prolongation of life, accompanied not infrequently by "apparent cure," are seen in many cases of malignant disease; but even though some patients have been in good health for periods ranging from seven to thirteen years, it would be unwise to predict that any of them would remain free from recurrence indefinitely. The repute of radium therapy has suffered severely from the irrational enthusiasm and unthinking expectation which so often attend the appearance of a new remedy; but none the less, it is impossible to deny that radium is a therapeutic agent of great, and in some respects unique, power. With increased knowledge and improved technic, it may be hoped that in time the word "cure" may be used.

No suggestion is made that radium should be resorted to instead of surgery in operable cancer cases. Its use, when operation has become impossible, is, on the other hand, entirely justified. It is frequently attended by good results. Thus, in cancer of the lip, "great benefit is often obtained in inoperable cases, the progress of the disease being arrested, ulceration healed, and hemorrhage and discharge abolished." In one form of epithelioma of the cheek, the method of burying tubes of radium in the diseased area "will almost invariably bring about the complete disappearance of the lesion, which rarely, if ever, recurs." Cancer of the tongue is notoriously difficult to treat by radium, and used to be the *bête noire* of the radiologist; but recently, with improved technic and increasing clinical experience, much more encouraging results have been obtained, though the cases still present much difficulty in treatment and are a source of anxiety to all concerned.

PARIS

(From Our Regular Correspondent)

May 6, 1925.

Intratracheal Injections of Lipiodol in Roentgenologic Diagnosis of Respiratory Affections

In a recent article, Sergent and Cottenot have given their opinion on the merits and the drawbacks of the roentgenologic examination of the bronchi following injections of lipiodol, as recommended by Sicard and Forestier. Two years' experience with the method has shown them to what extent useful information may be secured thereby, and what errors result from a wrong interpretation of the roentgenograms. Two fundamental principles must be kept in view if one hopes to interpret correctly the photographs taken after intratracheal injection of lipiodol: the first is, that lipiodol renders only a small part of the bronchial tree opaque: one could not think of injecting the fluid into all the ramifications of the bronchi. That would be dangerous, in the first place, and then, again, the confusion of the images would be so great that the plate could not be interpreted at all. Consequently, if the bronchi and bronchioles into which the lipiodol has been injected do not present anomalies, we must not conclude from that fact that the whole bronchial tree is normal. The small quantity of lipiodol injected makes its way into the bronchial terminals through the action of two forces: first, the force of gravity (which suggests the desirability of placing the subject during the injection in a position that will be most likely to direct the fluid in the direction needed), and, secondly, thoracic aspiration, which plays an even greater part than the force of gravity. Normally, the force of gravity and thoracic aspiration permit the injected lipiodol to penetrate to the bronchial terminals, but any pathologic obstruction (compression, stenosis of a bronchus) may intervene to prevent its progression. The repletion of a bronchus by pathologic secretions may act in the same manner. Finally, thoracic aspiration may be defective, owing to a respiratory insufficiency or to emphysema, or possibly to a local sclerosis, or to a pleural adhesion or to paralysis of the diaphragm. If the injected fluid enables one to recognize a typical pathologic condition (a cavity or a bronchial dilatation), an affirmative diagnosis without possible error can be made. If, on the contrary, it shows only a normal appearance of the bronchi, no definite conclusion may be drawn, since some one of the causes cited above may be responsible for withholding the contrast medium from the region in question. In that case, the experiment should be repeated and an endeavor made to have everything in as favorable a condition as possible (a different position of the patient, deeper breathing during the injection, as complete evacuation of the bronchi as possible before the fluid is injected). Of the various

abnormal images, some are typical, while others may lead to a discussion. The typical images are the following: a large opaque spot connected with the bronchial tree by a cylindric shadow points to the existence of a cavity with its draining bronchus; the various aspects termed a "string of beads," a "bunch of grapes," a "raceme of wisteria," "glove fingers" or a "bunch of bananas" are charcteristic of bronchial dilatations or of peribronchial abscesses. Deviations of the trachea, or parietal fistulous tracts with a single opening into the bronchi are revealed in an unquestionable manner.

Some of the images are of doubtful significance; for example, the aspect termed "pigeon's nest," with its upper level horizontal, which may indicate bronchial dilatation but may also point simply to stagnation of the lipiodol in the bend of a large bronchus otherwise absolutely normal. Particularly, juxtahilar aspects resembling a pigeon's nest should be judged with great care, since often they do not indicate a pathologic lesion. One must likewise be suspicious of apparent indications of a cylindric bronchial dilatation. Often a photograph taken at another angle (dorsal position) shows that it was an optical illusion and that the bronchi are of normal caliber.

Even though the image is negative, it may have considerable diagnostic value; for instance, in cases in which one is endeavoring to decide between a bronchiectatic suppuration and a vomica due to an encysted suppuration opening secondarily into the bronchi. A negative image, after several trials, will point with considerable probability to an encysted suppuration. As the latter has only a narrow and circuitous opening into the bronchi, it is only natural that it is not revealed by the injected lipiodol. Sicard and Forestier have certainly introduced a valuable method of exploration.

The Rôle of the d'Hérelle Bacteriophage in the Treatment of Typhoid Fever

In an interesting article in the *Presse médicale*, Hauduroy discusses the part played by the bacteriophage in typhoid. In the cases of typhoid fever studied by d'Hérelle and by Hauduroy, there was such a striking coincidence between the appearance of the bacteriophage in the stools and the beginning of convalescence as to justify the belief that there is a relation of cause and effect between the two phenomena. In all cases of typhoid that ended in recovery, a bacteriophage very active toward the bacillus of typhoid was found a short time before defervescence took place or coincident with it. The bacteriophage may remain present for several days in the stools or it may be found only once. It disappears usually during convalescence. While the bacteriophage always appears in the stools coincident with a phase of clinical improvement, it cannot be found at any other period of the disease. It seems, therefore, logical to accord to the bacteriophage an important rôle in the process of recovery from the disease.

Hauduroy has endeavored to ascertain whether the bacteriophage could be found also in the blood of typhoid patients. If, during the first ten days of the disease, a blood culture is taken, it will be positive. Through filtration it will be possible to find the bacteriophage, but it is usually difficult to find and it is not very active. If a blood culture is taken at the end of the disease, it will either be negative and a very active bacteriophage will be found, or it will be positive and a bacteriophage only moderately active will be discovered.

In certain cases a blood culture made while the temperature was still high but only a few days before defervescence was only transiently positive. One could recognize at first organisms presenting all the characteristics of typhoid bacilli. Later on, these organisms had disappeared, and the blood culture contained a very active bacteriophage. These different results may be very readily understood and interpreted. In the cases of positive blood culture, if there is a bacteriophage in the blood at all, its action is still too weak to destroy the typhoid bacilli. In the cases of negative blood culture there are no longer any typhoid bacilli in the blood; the blood culture contains only the bacteriophage. In the case of the blood culture that is transiently positive, the blood culture "caught" both the bacteriophage and the germs; if it had been taken a little earlier it would have been absolutely positive, and a little later it would have been absolutely negative.

The foregoing facts, considered together with the clinical aspects—the favorable or fatal evolution of the disease, show plainly the part that the bacteriophage plays in the natural recovery from typhoid fever. To be sure, the bacteriophage is not the only factor that plays a part in the recovery; it seems likely that other principles contribute to the destruction of the typhoid bacilli when the disease has a favorable outcome. Moreover, the bacteriophage does not make clear to us why such a strong immunity is developed after the patient recovers.

BELGIUM

(From Our Regular Correspondent)

April 6, 1925.

The Proposed Law Restriciting Vivisection

The crusade begun many years ago by the antivivisectionists has culminated in the presentation to the senate of two bills looking toward the suppression of vivisection. These bills would prohibit animal experimentation and also the utilization of horses for the preparation of antidiphtheritic and antitetanic serums, and the use of rabbits or guinea-pigs for the diagnosis of germ diseases. A universal protest has gone forth from learned societies. The Faculté de médecine of Liége has sent a protest to the senate in which it proclaims the absolute necessity of experimental researches and contends that the legislative power, the judicial power and the police charged with the application of the laws are in no wise competent to decide as to the necessity of conducting a scientific experiment in the manner that the proposed law prescribes. This action of the Faculté de médecine of Liége was endorsed by the Académie royale de médecine. It protested against the tendencies of the present bill which fails to distinguish between the acts committed by cruel and brutal persons who torture animals and the experiments of vivisection performed by the professors of physiology and medicine. Experimentation with animals is justified and should be permitted when carried out by the professors and their assistants and pupils in the laboratories of universities and schools of higher instruction, under the supervision of laboratory directors, all measures being taken to insure the proper anesthetization of animals. Demonstrations for the benefit of students of medicine are indispensable, and a law that would prevent the professors from employing these would constitute a grave pedagogic error. Following this discussion and the issue of these protests, also the facultés de médecine of Ghent, Brussels and Louvain (which includes thus all the medical schools) emitted manifestoes proclaiming the absolute necessity of experimental researches on animals.

Organization of the Medicosocial Service in the Liberated Regions

At a recent meeting of the staff of the army medical corps located at the garrison of Antwerp, Dr. Van den Abeele explained the organization of medicosocial insurance in the liberated regions. Just at this time the question of social insurance in Belgium is the center of agitation. Under the German régime the member of a health insurance society is entitled to medical, surgical and pharmaceutical assistance, and, in addition, for the period of his incapacity, receives an indemnity or cash benefit almost equal to his wages or

salary. It must, however, be admitted that numerous abuses arise in connection with the administration of the system. The German régime works hardship on the practitioner, since it does not permit the free choice of physician and allows certain forfeitures. Under these conditions, the physician is a mere official whose compensation is controlled by an all-powerful administration. The administrative service reserves 80 per cent. of the sums paid in by the insured, while the remaining 20 per cent. is divided among the physicians, surgeons and pharmacists.

Restrictions on the Consumption of Alcoholic Beverages

On the eve of the election to name new members of the legislature, there has been considerable agitation throughout the country in opposition to the existing legal restrictions on the consumption of distilled beverages. There were some indications that the agitation might be partially successful. The Academy of Medicine, therefore, reflecting on the baneful effects of alcoholism and the means of combating its ravages, has unanimously passed the following resolution proposed by Dr. Bordet:

> Convinced, as we are, of the good results, from the standpoint of social hygiene and public health, that have been achieved through the operation of the present law controlling the consumption of alcoholic beverages; learning of the regrettable agitation in opposition to the legal enactments that have brought honor to the Belgian parliament, and believing, as we do, that an overthrow of the legislative work already accomplished would inflict a cruel disappointment on those who have faith in the progressive development of social hygiene under the banner of our institutions, we, the members of the Royal Academy of Medicine, hereby express the hope and desire that the present law may be maintained in its entirety.

Copies of this resolution have been transmitted to the several ministries, the houses of parliament and the public press.

Modifications in the Symptoms of Epidemic Encephalitis

Addressing an audience composed chiefly of neurologists and surgeons, Prof. R. Vorhoogen recently discussed the evolution of the symptoms of epidemic encephalitis. There is no doubt that epidemic encephalitis in Belgium has undergone considerable modification in its clinical aspects. At the start (1918), during the epidemic period, the diagnosis was simple. At present the disease seems to have entered on an endemic period; the initial symptoms are less frank than formerly; ocular and facial paralysis are no longer common; the febrile period at the beginning is lacking, and frequently the diagnosis cannot be reached without consideration of the sequels. The speaker called attention to the symptoms that distinguish true Parkinson's disease from the encephalitic sequels. He demonstrated by the analysis of three cases of a uremic syndrome and a case of diabetic polyneuritis that the presence of an excessive amount of sugar in the spinal fluid has no diagnostic significance for epidemic encephalitis.

Hygiene in the Colonies

Addressing a gathering at the Institut des hautes études, Dr. A. Dubois has given a comprehensive account of the hygienic situation on the Congo. One significant fact brought out was that the death rate among European colonists had been reduced 50 per cent. (30 per thousand in 1910, 15 per thousand in 1922). While admitting as accessory causes of progress the improved housing conditions, the better food, and the slight decrease in the consumption of alcoholic beverages, he nevertheless is inclined to emphasize the causal importance of the advances in medicine. The chief hygienic problem of Europeans living in the colonies is as to the best means of avoiding infectious diseases, the most important of which is malaria, and, in combating this disease, individual prophylaxis by means of quinin, and the use of screens over doors and windows, together with a better organization of therapeutics, have been the main factors making for improvement. However, the development of the general services of antimalaria prophylaxis must not be neglected. The speaker pointed out also the need of a better supply of the foodstuffs to which Europeans are accustomed. Everywhere in the Congo region the food problem is becoming more difficult; for the Congo is not well supplied with a large variety of food products. The solution lies in the encouragement of agricultural enterprises in the interior.

The Belgian Medical Temperance Society

During the last twenty-eight years, the Société médicale belge de tempérance has been the rallying center of the physicians who have stood behind the crusade against alcoholism in Belgium. With the aid of the contributions of its members and the additional support received from the Ligue patriotique contre l'alcoolisme and from the department of public health, the society has been able to distribute its bulletins regularly among most of the physicians and a large number of the pharmacists of the country. The society participates also in the annual congress of the federation of Sociétés belges d'abstinence totale. The Antwerp session this year was a marked success. The next meeting will be held at Liége in 1926.

Center for Neurologic Diagnosis

Under the name of Centre neurologique de Bruxelles a medical group has been established at Brussels which enables neurologists to enlist the services of specialists who may be of aid in the diagnosis and treatment of nervous diseases. The organization plans for the present: a general neurologic service, a neuropsychiatric service, a neurophthalmologic service, a neurotorhinolaryngologic service, a neurorthopedic service, a service of the pathology of the sympathetic and endocrine systems, a roentgenographic service, a laboratory service and a neurosurgical service. In the order of their importance, the purposes to be served by the collaboration are: diagnosis, therapeusis and education. The first service to be opened is a center for neurologic diagnosis. Through the cooperation of the members of the medical group, a card of diagnosis of referred patients will be prepared and will be transmitted to the attending physician.

BUDAPEST

(From Our Regular Correspondent)

April 27, 1925.

The Therapeutics of General Paralysis

Dr. Géza Balogh, who has devoted all his time in late years to the study of the subject, sums up his conclusions as to the latest methods of treatment in cases of general paralysis as follows: There are four methods of treatment: (1) antisyphilitic, (2) protein, (3) malaria inoculation treatment and (4) the combination of the foregoing three methods. 1. The antisyphilitic treatment varies. Balogh follows a routine treatment, giving weekly intravenous injections of neo-arsphenamin with increasing doses, a total of 5 gm. At the same time some preparation of mercury is injected, intragluteally, every fifth day. Weekly intraspinal injections are given of 5 mg. of neo-arsphenamin dissolved in 1 c.c. of distilled water and diluted with 10 c.c. of the patient's cerebrospinal fluid. In one course, six endolumbar injections are made. After a lapse of from two to three months, the course may be repeated. 2. In protein therapy, 5 c.c. or more of milk is injected intragluteally once a week, and neo-arsphenamin is administered. 3. In malaria inoculation, from 5 to 10 c.c. of blood from a malarial person is injected intravenously, subcutaneously or intramuscularly. Intravenous injection produces a febrile reaction in from five to seven days, and the subcutaneous injection in from ten to sixteen days. The patient's temperature is taken three times a day;

from twelve to fourteen paroxysms may be expected. During these, caffein is administered, and once a day a digitalis preparation is given. The function of the kidneys, and the nutrition, are observed, and the patient's strength is conserved. To terminate the paroxysms, 0.5 gm. of quinin is given twice daily for three days, and then a day's pause follows. The malaria is cured entirely by the administration of 0.6 gm. of arsphenamin.

4. Balogh had the best results with the combined method. All somatic symptoms—rigid pupils, dysarthria, ataxia, the reflexes, psychic symptoms, reading, writing, reckoning, delusions, and the expansive character—have improved. The physical and psychic abnormalities have strikingly faded in most patients. The most favorable results were noticeable in the patients of from 30 to 40 years. In cases in which the manifestations of dementia were in the foreground, there was no considerable improvement noticeable.

The clinical symptoms usually parallel the laboratory findings. However, in some cases the treatment had no influence on the blood findings, despite the very favorable clinical results. Some physicians say that the value of a therapeutic method is decided by the recurrences. This is doubtless true. How long the improvement of these patients with general paralysis will last, and whether the treated patients will die earlier than the nontreated ones, are questions for the future to answer.

The Title of Specialist in Hungary

The Hungarian ministry of public welfare has asked all the medical associations of the country how the use of the title "specialist" should be regulated. The question has been broadly discussed, and the following regulation, having the strength of a law, has been passed: The medical specialties in which specialists are legally recognized are: internal diseases, children's diseases, nervous diseases, mental diseases, surgery, orthopedics, genito-urinary diseases, obstetrics and gynecology, ophthalmology, otology, laryngology and diseases of the nose, dermatology and venerology, dentistry, physiotherapy, roentgenology and radiotherapy, laboratory examinations, chemical pathology and histologic pathology. The title of specialist in one of these branches may be used by fully qualified medical doctors who have dealt with their respective specialty for at least two years in special university clinics, or for at least three years in first-class hospitals that contain special sections. The certificate is given in the former case by the director of the clinical section, in the latter case by the director of the hospital and the chief physician of the respective section. A specialist can use the title of only that specialty, the certificate of which he is holding. If a physician wishing to carry on a special practice is settling in a provincial city, he has to produce his certificate as to his special qualification before the chief district medical officer, who, in conjunction with the council of the town or county, decides in the matter. This regulation does not relate to physicians who have been acting as specialists. Should they move to another town, however, they must produce a certificate signed by the chief medical officer or officers of the town where he has practiced, to the effect that he has acted as a specialist for at least three years. The official list of specialists practicing in Hungary will be published yearly by the ministry of public welfare. The chief medical officers of counties and cities are obliged to report all changes in the list of specialists working in their territories.

Any physician illegally using the title of specialist, either on his name plate or on his prescriptions or elsewhere, is liable to a fine of from one and a half to three million crowns. In the first offense the police as a sanitary board deals with the trespassers, in the second offense the court and in the third the ministry of public welfare will act.

VIENNA

(From Our Regular Correspondent)

April 24, 1925.

Convention of the Austrian Society for Cancer Research

Under the chairmanship of Professor Eiselsberg, the annual meeting of the Oesterreichische Gesellschaft für Krebsforschung was held recently in Vienna. A report was rendered of the activities of the society during the previous year: A short treatise on the early diagnosis of carcinoma was sent last year to all the practicing physicians in Austria; also a questionnaire, which was filled out and returned by a large number of physicians, whereby the pathology of cancerous affections was enriched by many valuable observations. Also a four-day "short course" on the theoretical and practical aspects of cancer was given, no tuition fee being charged. This course was given in Vienna in October, and it met with such approval that it will become an annual event.

Unfortunately, the continued scarcity of money prevents the gathering of comprehensive cancer statistics for Austria. Dr. Peller has, however, studied the evidence presented by the large number of cancer cases occurring in the women's hospitals (Wiener Frauenkliniken). It was found that the number of births had no influence on the frequency of cancerous affections, but that this factor did affect the localization of tumors within the organs of reproduction (uterus and breast). The more pregnancies a woman has had, the later a cancer becomes manifest. Dr. Peller assumes, therefore, that a pregnancy affords a certain amount of protection against carcinoma. His researches have shown also that the supposed increase in cancer mortality during recent decades is unfounded. Whereas in Heidelberg and in Berlin, in Stockholm and even in Leningrad, excellent institutes for cancer research have been established, and also in France a central organization for cancer research has just been organized, Austria is far behind other countries in this respect. Nevertheless, we are not neglecting this field of research, as is evidenced by the address delivered by Dr. Rhoda-Erdmann. The subject of her address was "The Importance of Cultures in Vitro for Cancer Research," in which she gave an illuminating discussion on the transformation of cancer cells into normal cells through the process of artificial cultivation. Since 1907 (Carrel) the artificial cultivation of animal cells in blood serum has been carried out. It has since become known that cancer cells grow faster in the serum of animals affected with cancer than in normal serum. In vitro, the normal cell grows just like the cancer cell, but, if both are put back in the body, the normal cell fails to survive, while the cancer cell continues to grow, from which it is evident that the cancer cell possesses greater vitality than the normal cell. It could be shown also that the metabolism of the cancer tissue is different from the metabolism of the normal tissue. In the serum of cancerous animals the cancer cell remains unchanged on cultivation, but when cultivated in normal serum it becomes a normal cell. The establishing of this fact is of great importance, because Dr. Rhoda-Erdmann is the first investigator who has succeeded in transforming cancer cells into normal cells by the process of cultivation. It would appear, therefore, that the malignancy of the cancer cell, its unlimited growth, and its transmissibility from animal to animal are variable qualities which can be modified and brought back to normal. In her address, which was elucidated by many slides, Dr. Rhoda-Erdmann pointed out in what direction experimental researches should be carried on in order to understand and to combat cancerous affections.

Changes in the Study Requirements for Dentists

The ministry of public instruction plans, in agreement with the medical and the dental associations of Austria, to introduce far-reaching reforms in the requirements for a dental

diploma. According to the proposed legislation, which has been approved by all concerned, the dental student must first obtain the medical degree of doctor of medicine, and then must spend four semesters (two years) longer in the study of theoretical and practical dentistry, including the technic of the preparation of dental prostheses. At the end of the two-year dental course, the candidate must pass a severe test on these special dental studies, in order to secure a dental diploma. In connection with these changes in the dental curriculum, there will be a reorganization and amplification of the dental clinics in Vienna, Graz and Innsbruck, for which provisions have already been made in the new budget.

Appointment of a "Sanocrysin" Commission in Austria

"Sanocrysin," which has been highly recommended in Denmark for the treatment of tuberculosis, is to be given a trial in Austria. It is planned to appoint a special commission, as was done in England and in Sweden, to test the value of this medicament, since the action of the preparation is not without objectionable features. A group of recognized clinicians, who are among the best known phthisiologists of Austria, together with a pharmacologist, have been appointed by the Gesellschaft der Aerzte to test the product. For the present, the medicament will not be placed in the hands of private practitioners. Tuberculosis is so widespread with us that it is often referred to as morbus Viennensis.

The Oligodynamic Action of Metals in the Treatment of Wounds

In the Eiselsberg clinic, experiments have been carried on for some time in the use of metals and their salts for the treatment of wounds. Especially the heavy metals, such as silver, copper, zinc and lead, have been found efficacious, but still better, the salts of these metals. These all have bactericidal and ferment-destroying properties. Experiments by Saxl with a suspension of silver chlorid showed that this substance was harmless for the skin and mucous membranes. In gastric ulcer, internal administration of the substance at the Wenckebach clinic was found to control the pain and the hyperacidity. Progressive suppurations appearing, during the war, following severe injuries to the soft parts, were usually treated with continuous baths, and, in this connection, it was noted that patients who were treated in wooden bathtubs did not improve so fast as those who were put in metal tubs. Dr. Pfab used then a silver chlorid ointment with a petrolatum base for the treatment of chronic suppurating wounds. In burns, leg ulcer, necrosis of fascia, traumatic bone suppurations and in chronic cystitis, in which ointments could not be used, Pfab employed the suspension. This method of treatment has now become the routine at the clinic.

Marriages

JESSE ELLIOTT ROYER, Oakland, Calif., to Mrs. Addielee Morris Davidson of Atlanta, Ga., at San Francisco, April 30.

HAROLD F. THORLAKSSON, Crystal, N. D., to Miss Doris Bousfield of Winnipeg, Man., Canada, April 15.

HAROLD J. NORTON, Columbus, Ind., to Miss Helen Green Patten of Springfield, Ohio, April 28.

ROBERT MAGE SUTTON, Peoria, Ill., to Miss Margaret Livingston Bailey of Pekin, April 24.

WALTER L. HOGAN to Miss Marion I. Campbell, both of Hartford, Conn., April 13.

ABRAHAM E. BERNSTEIN to Miss Dorothy Maslansky, both of New York, April 23.

HAROLD FONSECA DA COSTA to Miss Elizabeth Zulfer, both of Chicago, May 6.

PAUL G. POMEROY, Marengo, Iowa, to Miss Ottilie Scherer of Chicago, recently.

Deaths

Gardner Taber Swarts ✠ Providence, R. I.; Medical School of Harvard University, Boston, 1879; secretary of the Rhode Island State Board of Health and state registrar of vital statistics of Rhode Island, 1894-1917; member of the New England Dermatological Society; past president of the American Public Health Association, the Rhode Island Medical Society and the Providence County Medical Society; consulting surgeon to the Providence City and Rhode Island hospitals, Providence, and the Memorial Hospital, Pawtucket; aged 67; died, May 12, of pneumonia.

Oliver Lyons ✠ Denver; Kentucky School of Medicine, Louisville, 1898; associate professor of genito-urinary surgery, University of Colorado School of Medicine, Denver; member of the American Association of Genito-Urinary Surgeons and the American Urological Association; served in the M. C., U. S. Army, during the World War; member of the board of health; aged 50; died, April 30, at St. Luke's Hospital, of carcinoma.

Kay Isadore Sanes ✠ Pittsburgh; Western Pennsylvania Medical College, Pittsburgh, 1896; member of the American Association of Obstetricians and Gynecologists, and the American Association of Anesthetists; served in the M. C., U. S. Army, during the World War; aged 52; died, May 8, at the Western Pennsylvania Hospital; of heart disease.

Malcolm McBurney, New York; Columbia University College of Physicians and Surgeons, New York, 1910; formerly instructor of bacteriology at his alma mater; member of the New York Pathological Society; served in the M. C., U. S. Army, during the World War; aged 41; died, April 12.

John Diedrich Moritz, Charlottesville, Va.; University of Maryland School of Medicine, Baltimore, 1904; member of the Medical Society of Virginia; on the staff of the University of Virginia Hospital; aged 50; died, April 23, of septicemia and heart disease.

Irvin Lindenberger ✠ Louisville, Ky.; University of Louisville School of Medicine, 1896; formerly adjunct professor of medicine at his alma mater; served in the M. C., U. S. Army, during the World War; county health officer; aged 50; died, April 26.

Charles William Jester, Bethany, Neb.; Lincoln Medical College of Cotner University, 1904; formerly vice dean, and professor of physiology and pediatrics at his alma mater; aged 59; died, April 1, in a hospital at Lincoln, of cerebral hemorrhage.

Manley F. Gates ✠ Medical Director, U. S. Navy, retired, Damariscotta, Maine; Medico-Chirurgical College of Philadelphia, 1888; member of the Florida Medical Association; aged 61; died, March 31, at Southampton, England.

George Wilson Strickland, Pittsburgh; University of Illinois College of Medicine, Chicago, 1908; member of the Medical Society of the State of Pennsylvania; aged 50; died, April 9, at the Pittsburgh Hospital, of pneumonia.

William Logie, Sarnia, Ont., Canada; Trinity Medical College, Toronto, 1886; health officer of Sarnia since 1918; formerly member of the town council, mayor and member of the board of education; aged 63; died, April 20.

George Frederick Zaun ✠ Milwaukee, Rush Medical College, Chicago, 1893; member of the Milwaukee Oto-Ophthalmic Club; aged 57; died, May 1, at St. Mary's Hospital, of pneumonia following an appendectomy.

Asahel Sumner Deane, Taunton, Mass.; Berkshire Medical College, Pittsfield, 1865; member of the Massachusetts Medical Society; formerly on the staff of the Morton Hospital; Civil War veteran; aged 88; died, April 10.

Theodore D. C. Schmalzriedt ✠ Detroit; Detroit College of Medicine and Surgery, 1894; formerly health officer of Springwells Township and Wayne County; aged 51; died suddenly, April 17, of cerebral hemorrhage.

William McDonough Shoebotham, London, Ont., Canada; Western University Medical School, London, 1905; for four years member of the board of education; aged 52; died, January 13, of angina pectoris.

Joseph Oliver Wilhite ✠ Anderson, S. C.; Jefferson Medical College of Philadelphia, 1881; aged 65; died, April 17, at a local hospital of general peritonitis following an operation for an appendiceal abscess.

Morgan Leland Clint ✠ Breckenridge, Mo.; University of Missouri School of Medicine, 1908; served in the M. C.,

U. S. Army, during the World War; aged 44; died, in April, of ptomaine poisoning.

Edwin Booth Gray ✠ Colfax, La.; Vanderbilt University Medical Department, Nashville, Tenn., 1897; formerly coroner of Grant Parish; aged 50; died, March 22, at a sanatorium in New Orleans.

Franklin Pierce Batdorf, Chillicothe, Mo.; University of Pennsylvania School of Medicine, Philadelphia, 1874; member of the Missouri State Medical Association; aged 76; died, in April.

Lawrence A. Felder, Quitman, Ga.; Jefferson Medical College of Philadelphia, 1888; member of the Medical Association of Georgia; died suddenly, March 27, at Athens, of heart disease.

Robert A. Stewart, Russell, Kan.; Kansas Medical College, Topeka, 1899; member of the Kansas Medical Society; aged 57; died, March 28, at a hospital in Hays, following an operation.

Eliza Josephine Dadmun ✠ Boston; Tufts College Medical School, Boston, 1901; aged 58; died, February 11, at the Massachusetts General Hospital of papilloma of the bladder.

Bascom B. Warren, Covington, La.; Medical Department University of Louisiana, New Orleans, 1882; member of the Louisiana State Medical Society; aged 65; died, March 31.

Charles F. Bowen, Chicago; Rush Medical College, Chicago, 1889; member of the Illinois State Medical Society; aged 65; died, April 16, of chronic nephritis and uremia.

Robert M. Wickline, Austin, Texas; Memphis (Tenn.) Hospital Medical College, 1891; member of the State Medical Association of Texas; aged 60; died, in April.

George Elmer Cogswell, Springfield, Ohio; Hahnemann Medical College and Hospital, Chicago, 1873; aged 76; died, April 15, at the Mercy Hospital, Hamilton.

John T. Finnie, Montreal, Que., Canada; McGill University Faculty of Medicine, Montreal, 1869; L.R.C.S., Edinburgh, Scotland, 1869; aged 78; died, February 10.

G. Webster Taylor, Chattanooga, Tenn.; University of Tennessee College of Medicine, Memphis, 1897; aged 55; died, April 15, of cerebral hemorrhage.

Melville Cox Strickland ✠ Oregon City, Ore.; Jefferson Medical College of Philadelphia, 1889; aged 58; died, April 19, of cerebral hemorrhage.

Edwin Tiffin Pry, Gig Harbor, Wash.; Vanderbilt University Medical Department, Nashville, Tenn., 1892; aged 60; died, in April, of heart disease.

Harvey P. Smock, St. Mary, Ky.; Kentucky School of Medicine, Louisville, 1896; aged 53; died, April 9, at Louisville, following a long illness.

James Hulbert Vadakin ✠ Bethany, Ill.; Kentucky School of Medicine, Louisville, 1891; aged 64; also a druggist; died, April 27, of nephritis.

Cavossa V. Gay, Los Angeles; Leonard Medical School, Raleigh, 1906; aged 48; died, February 13, at the Los Angeles General Hospital.

Bernard Oettinger, Long Beach, Calif.; Miami Medical College, Cincinnati, 1896; aged 60; died, April 16, following a long illness.

George D. Williams, Gatesville, N. C.; College of Physicians and Surgeons, Baltimore, 1897; aged 50; died, April 12, of pneumonia.

Edward Clinton Harelson, Clarksville, Tenn.; Vanderbilt University Medical Department, Nashville, 1878; aged 71; died, April 19.

Samuel B. Finney, Delta, Ohio (licensed, Ohio, 1897); aged 92; died, April 1, of carcinoma of the face and neck.

Edward Walther, St. Paul; St. Louis College of Homeopathic Physicians and Surgeons, 1871; aged 89; died, April 18.

Wilbur F. Flewellen, Belton, Texas; New Orleans School of Medicine, 1870; aged 82; died, April 8, of myocarditis.

Isaac Newton McNutt, Knoxville, Tenn.; Medical College of Virginia, Richmond, 1866; aged 85; died, April 18.

Wilson Potter Ard, Woodward, Pa.; Jefferson Medical College of Philadelphia, 1880; aged 80; died, April 9.

Lewis Schultz, Minnewaukan, N. D.; Louisville (Ky.) Medical College, 1896; aged 55; died in April.

Clarence Edward Wagner, Hennessey, Okla.; Toledo Medical College, 1907; aged 40; died, March 31.

Francis A. Kleinhans ✠ Milwaukee; Milwaukee Medical College, 1897; aged 54; died, April 23.

The Propaganda for Reform

IN THIS DEPARTMENT APPEAR REPORTS OF THE JOURNAL'S BUREAU OF INVESTIGATION, OF THE COUNCIL ON PHARMACY AND CHEMISTRY AND OF THE ASSOCIATION LABORATORY, TOGETHER WITH OTHER GENERAL MATERIAL OF AN INFORMATIVE NATURE

SOME WAGNER'S PREPARATIONS NOT ACCEPTED FOR N. N. R.

Report of the Council on Pharmacy and Chemistry

The Council has authorized publication of the following report declaring "Wagner's Artificial Vichy," "Wagner's Artificial Vichy Citrated," "Wagner's Artificial 'Ems' Kraenchen Water," "Wagner's Special C," "Wagner's Carbonated Phosphate" and "Wagner's Piperazine Water" of W. T. Wagner's Sons Co., Cincinnati, unacceptable for inclusion in New and Nonofficial Remedies.

W. A. PUCKNER, Secretary.

"Wagner's Artificial Vichy" is stated to conform to the average analysis of the most important Vichy Springs and, according to the label contains in 100,000 parts:

Sodium bicarbonate	531.35	Potassium sulphate	33.05
Calcium bicarbonate	44.10	Sodium sulphate	1.85
Magnesium bicarbonate	32.30	Strontium sulphate	0.35
Ferrous bicarbonate	0.40	Sodium arsenate	0.20
Sodium chlorid	53.38	Sodium phosphate	9.70
Potassium chlorid	0.02	Silica	6.66

According to the label, "Vichy owes its reputation to the results produced by its application in cases of indigestion and other gastric derangements, in liver congestion and chronic affections of the urinary organs."

"Wagner's Artificial Vichy Citrated" is stated to consist of an addition of sodium citrate (9 grains to each glassful) to Wagner's Vichy. The label bears the claim that its "alkalizing action upon the system and urine is more pronounced and prompt than that of any other alkaline water."

In the advertising, which evidently is addressed to the public, it is claimed that "it has been successfully used in the treatment and for the relief of indigestion and other gastric derangements, for catarrhal conditions of the stomach, intestines and gall-duct. . . ." After lauding its asserted virtues "in the treatment of acid eructations, fullness after meals, nausea, acid and nervous dyspepsia, flatulence . . ." the advertising continues: "Its use is further indicated in catarrhal conditions of the stomach, intestines, respiratory organs, gallbladder, urinary bladder and in hepatic disorders, chronic rheumatism, gout, nephritis and oedema, etc."

Dependence on it in diabetes is suggested in this statement:

"In those cases of diabetes in which the sufferer has not become too emaciated and thereby lost his resistive powers, Wagner's Vichy taken in glassful doses, either hot or cold, is of great service and does much good."

It is even asserted that from the continued use of the "water" ". . . the patient develops quite a tolerance for sugar and no longer need refrain from its use entirely."

"Wagner's Artificial 'Ems' Kraenchen Water" is stated to contain in one gallon the following constituents:

Sodium bicarbonate	116.10 grs.
Sodium chlorid	57.08 grs.
Magnesium bicarbonate	12.10 grs.
Calcium bicarbonate	12.60 grs.
Potassium and sodium sulphate	3.94 grs.
Silica and alumina	2.90 grs.
Iron, manganese, lithium and strontium	0.52 grs.
Sodium iodid and bromid	0.30 grs.
Total solids	205.54 grs.

The following appears on the label of this preparation:

"'Ems (Kraenchen)' Europe's most famous water is renowned for its curative effects in catarrhal affections of the mucous membranes, more especially in catarrh of the nose, throat and bronchial tubes. It is of inestimable value in asthma, hay fever, coughs and hoarseness, etc."

In the advertising it is asserted that the water of Bad Ems is today the household remedy for catarrh, coughs, hoarse-

ness, bronchitis, etc., and is, in Europe, in constant use by all persons who aim to retain, strengthen or improve their voice. It is stated that physicians of the United States of America have recognized the therapeutic value of Ems water. In consideration of this asserted recognition, the claim is advanced that the Artificial Ems Water is "adapted for treating all catarrhal conditions of the mucous membranes, especially of the nose, throat and bronchial tubes. Also for the relief and prevention of hay-fever and rose-fever."

"Wagner's Special C" is stated to contain in each four fluidounces:

Magnesium sulphate	50 grs.
Dried sodium sulphate	30 grs.
Sodium salicylate	10 grs.
Lithium benzoate	5 grs.
Tincture of Nux vomica	3 minims

It is claimed that the "formula" for this "water" originated with a very eminent physician who applied it with great success in the treatment of migraine. According to the label, "Special 'C' has been found equally effective in certain forms of articular rheumatism and neuralgia." In the advertising for this mixture it is stated: "An effective remedy and cure for migraine. Its use is also indicated in cases of intestinal toxemia, chronic gastritis, muscular rheumatism, lumbago, etc."

"Wagner's Carbonated Phosphate" is stated to be a solution of sodium phosphate in water charged with carbon dioxid, containing 30 grains of sodium phosphate in each fluidounce.

According to the label, Wagner's Carbonated Phosphate is "a certain hepatic stimulant." The following questionable or unwarranted claims occur in the advertising for this preparation:

"Sodium phosphate (the salt) in its pure state is recognized as one of the most serviceable aperients, hepatic stimulants and general regulators, and is an important constituent of the body widely distributed therein."

"The carbonic acid gas in connection with this salt forms a most valuable adjunct by furthering the expedition, assimilation and action of the phosphate of soda. . . ."

". . . a periodical use is very beneficial in the maintenance of health. . . ."

"It increases the functional activity of the liver and stimulates the glandular organs concerned in digestion."

". . . is by far preferable for children and persons of delicate stomach to any other laxative, aperient or purge. . . ."

". . . it is especially indicated as an aperient, in hepatic disorders, jaundice, rickets, constipation, etc., etc."

"Wagner's Piperazine Water" is stated to be a solution of piperazine in distilled water, each bottle of the product containing one gram dissolved in 24 fluidounces of carbonated distilled water. According to the label, Wagner's Piperazine Water "rids the blood and system of an excess of uric acid and thereby alleviates rheumatism, gout and other disorders resulting directly or indirectly from uric acid accumulations in the body." An advertising circular discusses the use of Wagner's Piperazine Water as a preventive and curative agent in the treatment of "rheumatism and gout."

Piperazine is one of many drugs which were introduced with the claim that their administration would bring about a solution of uric acid and uric acid deposits and in so doing would cure or alleviate gout and rheumatic affections. Piperazine was given extensive trial and, in the end, was found worthless. In 1918, the Council reported that the drug had been omitted from New and Nonofficial Remedies on the ground that it had been sufficiently tried to justify the conclusion that it is not of value (Reports Council on Pharmacy and Chemistry, 1918, p. 70).

The Council finds "Wagner's Artificial Vichy," "Wagner's Artificial Vichy Citrated," "Wagner's Artificial 'Ems' Kraenchen," "Wagner's Special 'C,'" "Wagner's Carbonated Phosphate" and "Wagner's Piperazine Water," marketed by W. T. Wagner's Sons Co., Cincinnati, inadmissible to New and Nonofficial Remedies because they are marketed with unwarranted therapeutic claims. In addition, Wagner's Artificial Vichy, Wagner's Artificial "Ems" Kraenchen, Wagner's Special "C" and Wagner's Piperazine Water are sold in a way which may lead to their indiscriminate and ill advised use by the public. With the exception of Wagner's Piperazine Water, the names of these preparations do not indicate the character of the potent ingredients.

While the use of complex mixtures such as those represented by Wagner's Artificial Vichy and Wagner's Artificial Ems Kraenchen has long obtained, the further complication of the first as represented by "Wagner's Vichy Citrated" must be held irrational; also "Wagner's Special 'C'" is held to be a needlessly complex mixture, the routine use of which is unscientific.

Correspondence

THE AMERICAN ASSOCIATION FOR MEDICAL PROGRESS

To the Editor:—I write to ask members of the American Medical Association to give their support to the American Association for Medical Progress. This organization is a real ally in fighting the battles for scientific medicine. The encouraging thing about the movement is that it was founded and is directed by laymen for the protection of medical research. Heretofore we have had to fight this battle alone. The honorary president is Charles W. Eliot, emeritus president of Harvard; the honorary vice presidents are Ex-Secretary Hughes, Bishop Alexander Mann, Cardinal O'Connell, President Ellen F. Pendelton of Wellesley, Ernest Thompson Seton and Owen Wister. The active officers are also nonmedical men of similar high order. Such an organization can be much more effective than medical men can be in fighting the propaganda against medical research.

This is a movement for which we should be grateful and to which we should give active support.

There are two ways in which we can help:

1. By taking out memberships ourselves.

2. By calling the organization to the attention of laymen who have our confidence, and urging them to join.

I can testify from experience that many intelligent laymen will give their financial support if only the organization and its importance are called to their attention.

The danger of interference with medical research by misguided mischief makers is a real and present one. There are constant efforts being made to hamper it. It comes up almost every year in efforts to enact hostile laws in some state legislatures. This opposition is strongly organized and, what is not generally known, well endowed. It probably had until recently $250,000 of endowment, and it has lately received an inheritance of $325,000 with ironclad provision for a relentless propaganda against experimental medicine. This endowment insures permanence and continuity to this opposition, and makes necessary some equally permanent and continuous activity to counteract it. It means that there are $25,000 or $30,000 a year in jobs, whose holders must earn their pay by keeping active. The numbers behind the propaganda are relatively small, but they consist for the most part of misguided sentimentalists and fanatics, who are prejudiced and unwilling to accept the truth and whose ammunition is gross and extravagant misrepresentation. These misrepresentations have effect, because there is no efficiently organized education of the public to counteract them. A very large part of the public will not support the movement when it knows the facts, but it is to a very great degree ignorant of the facts. Education is necessary and highly important. There has never been such a means of educating the public against these antivivisectionists and antivaccinationists and slanderers of the medical profession as is offered by this organization of laymen.

We should take an active interest in it.

I urge the members of our profession to give this unique ally of medical progress their active support in every possible

way, to join the association and to make a real effort to interest others in it. Annual memberships cost from $2 to $25; life memberships cost, in one payment, from $200 up. Write for application blanks to the American Association for Medical Progress, 370 Seventh Avenue, New York City.

WILLIAM ALLEN PUSEY, M.D., Chicago.
President, American Medical Association.

"THE EFFECT OF PERTUSSIS ON THE HEART"

To the Editor:—The letter on this subject by Dr. Ernst P. Boas (THE JOURNAL, April 25, p. 1291) is an example of the confusion caused by such articles as he quotes. This confusion has resulted in differences of opinion to be found in textbooks. The two articles in question are those of Drs. Henry Koplik and Mera Brick.

Koplik asserted that cardiac dilatation and failure in pertussis could be shown by (1) increased heart size by percussion, the right border in particular being beyond the normal limit; (2) irregularities of the pulse, and (3) edema about the eyes and hemorrhages. None of these findings can stand the test of careful analysis. In the first place, percussion of the right border of the heart unless considerably enlarged is unreliable; moreover, roentgen-ray studies of the heart in pertussis in several hundred cases at the Floating Hospital in Boston have shown that there is no increase in heart size. At the time of the paroxysm, as we stated, there undoubtedly is transient dilatation of the right heart. Secondly, the irregularities of the pulse, as determined from the arteriograms published by Poplik, consist of sinus arrhythmia, and so are not in any way evidence of cardiac failure. At the time Koplik made his report, little was known of the significance of cardiac arrhythmias. Thirdly, the edema and hemorrhages mentioned are evidence of peripheral vascular disturbance and not of cardiac dilatation or failure. In our article we had already referred to Koplik's observations.

The other article referred to, that of Brick, is a source of much confusion and cannot be considered as evidence of the effect of pertussis on the heart. It is based on the postmortem studies of fourteen cases of whooping cough, but in every instance there were important complications resulting in death. The result is that the study consists in the analysis of the effect of the complications of whooping cough on the heart. The chief complication was bronchopneumonia, which evidently killed thirteen patients. It is well known that patients dying of bronchopneumonia tend to have cardiac dilatation, especially of the right heart chambers. Furthermore, other diseases occurred in some of these cases—measles, tuberculosis, status lymphaticus, and in one case (Case 13) very recent "bilateral pneumonia." The abnormal increase in the fat droplets found in the heart muscle may also be ascribed to the complications that killed the patients, generally bronchopneumonia, rather than to the whooping cough. By careful analysis of the protocols it is therefore evident that the conclusions were unjustified. Incidentally, the measurements of the thickness of the ventricular walls generally showed a preponderance in favor of the left ventricle as compared with the right, judged from normal standards. In general, the more complications present in the cases, the more abnormal the heart was found to be. That the heart might be found at necropsy to be practically normal in whooping cough, even with the complication of bronchopneumonia, was shown in the following description of one of the cases:

CASE 5.—Necropsy report: The heart is of normal size. The apex is formed by the left ventricle. The consistency is good. In the heart there are blood clots and fluid blood. The valves are normal. The thickness of the heart wall is: left, 7 mm.; right, 2.5 mm. The papillary muscles and trabeculae of the right ventricle are slightly thickened. The musculature is pale; normally transparent. Anatomic diagnosis: Lobular pneumonia associated with pertussis. Enteritis follicularis, thymus hyperplasia and rickets are present. There is a slight hypertrophy of the right ventricle.

Thus, it is evident that the very confusion which we found present in the medical literature concerning the effect of pertussis on the heart has largely resulted from such articles as those just discussed. There is as yet no reliable evidence of either permanent damage to the heart or immediate failure of the heart from uncomplicated pertussis.

PAUL V. LEDBETTER, M.D.,
PAUL D. WHITE, M.D.,
Boston.

Queries and Minor Notes

ANONYMOUS COMMUNICATIONS and queries on postal cards will not be noticed. Every letter must contain the writer's name and address, but these will be omitted, on request.

BAYER-205, OR GERMANIN

To the Editor:—Some time ago I saw in THE JOURNAL a comment on Bayer-205 in which it was stated that the Germans have kept the formula of this secret. Has the composition been made known yet?

P. B. J., Chicago.

ANSWER.—The discovery of Bayer-205, also called Germanin, was announced several years ago, but the composition of the compound has been kept secret by the German promoters. The French chemist Fourneau claims to have prepared an identical product, which he calls F-309. Fourneau's product is described as the symmetrical urea of sodium *m*-amino-benzoyl-*m*-amino-*p*-methylbenzoyl-*l*-naphthylamino-4-6-8-trisulphonate. It has an exceedingly complicated structural chemical formula, with a molecular weight of 1,428. While the Germans have not admitted the correctness of Fourneau's assertion, no evidence has been presented that Fourneau's work is not correct. The product is known to contain neither arsenic nor mercury. Evidently it is a dye-substance derived from naphthylamine-sulphonic acid.

EATING SAND AND CLAY

To the Editor:—Can you inform me as to the cause of sand and clay eating in children? I have under observation a healthy child addicted to this diet, and at times large amounts of sand appear in the stool. What are the hazards and the treatment? Is there any literature to which you could refer me?

W. D. BRETZ, M.D., Huntingburg, Ind.

ANSWER.—Pica, or the eating of sand, clay and similar substances, is discussed in the textbooks on pediatrics. It was mentioned in Queries and Minor Notes (THE JOURNAL, Aug. 11, 1917, p. 486). The textbooks state that the taste is not uncommon in late infancy and very early childhood. Older children who are mentally normal rarely have this habit. The nutrition of children with this abnormal taste is often impaired. The child with pica should be watched to guard against the indulgence of the habit. A complete change of surroundings sometimes ends the practice. Nutrition should be improved as much as possible, and the stools should be examined for the ova of intestinal parasites.

HYPERHIDROSIS

To the Editor:—What treatment could be suggested for a patient with hyperhidrosis of the hand, especially in the right extremity, which was fractured by a shot? A silver prosthesis was applied, and there is no atrophy of the forearm or hand.

J. GONZÁLEZ DE LA TORRE, M.D., San Gabriel, México.

ANSWER.—As fallen arches are known to be etiologic factors in some cases of localized hyperhidrosis of the feet, it is possible that the fracture and the silver prosthesis may be contributing, if not actually the causative, factors in this case of hyperhidrosis of the hand. The application of a 25 per cent. solution of aluminum chlorid daily for three or four days is of much value in some cases. Roentgen rays given in one-half skin unit doses every ten days for three or four doses would probably give the best results.

Medical Education, Registration and Hospital Service

COMING EXAMINATIONS

ARIZONA: Phoenix, July 7-8. Sec., Dr. W. O. Sweek, 404 Heard Bldg., Phoenix.

CALIFORNIA: Los Angeles, June 15-18. Sec., Dr. Charles B. Pinkham, 906 Forum Bldg., Sacramento.

CALIFORNIA: San Francisco, July 6-9. Sec., Dr. Charles B. Pinkham, 906 Forum Bldg., Sacramento.

COLORADO: Denver, July 7. Sec., Dr. David A. Strickler, 612 Empire Bldg., Denver.

DELAWARE: Wilmington, June 16-18. Sec., Reg. and Homeo. Bd., Dr. H. W. Briggs, 1026 Jackson St., Wilmington.

FLORIDA: Tampa, June 15-16. Sec., Dr. William M. Rowlett, Citizens Bank Bldg., Tampa.

GEORGIA: Augusta, June 2-4. Sec., Dr. C. T. Nolan, Marietta.

GEORGIA: Atlanta, June 10-12. Sec., Dr. C. T. Nolan, Marietta.

ILLINOIS: Chicago, June 23-25. Supt. of Regis., Mr. V. C. Michels, Springfield.

IOWA: Iowa City, June 4-6. Sec., Dr. Rodney P. Fagen, Capitol Bldg., Des Moines.

KANSAS: Kansas City, June 16. Sec., Dr. Albert S. Ross, Sabetha.

KENTUCKY: Louisville, June 9-11. Sec., Dr. A. T. McCormack, State Board of Health Bldg., Louisville.

LOUISIANA: New Orleans, June 11-13. Sec., Red. Bd., Dr. Roy B. Harrison, 1507 Hibernia Bank Bldg., New Orleans.

MAINE: Augusta, July 7-8. Sec., Dr. Adam P. Leighton, Jr., 192 State St., Portland.

MARYLAND: Baltimore, June 16-19. Sec., Reg. Bd., Dr. Henry M. Fitzhugh, 1211 Cathedral St., Baltimore.

MARYLAND: Baltimore, June 9-10. Sec., Homeo. Bd., Dr. J. S. Garrison, Ten Hills, Baltimore.

MICHIGAN: Ann Arbor, June 9-11. Acting Sec., Dr. Guy L. Connor, 707 Stroh Bldg., Detroit.

MICHIGAN: Detroit, June 15-17. Sec. Dr. Guy L. Connor, 707 Stroh Bldg., Detroit.

MINNESOTA: Minneapolis, June 16-18. Sec., Dr. T. S. McDavitt, Lowry Bldg., St. Paul.

MISSISSIPPI: Jackson, June 23-24. Sec., Dr. F. J. Underwood, Jackson.

MISSOURI: St. Louis, June 23-26. Sec., Dr. James Stewart, Capitol Bldg., Jefferson City.

NATIONAL BOARD OF MEDICAL EXAMINERS: Written examinations in Class A medical schools. Parts I and II, June 24-26. All applications for this examination must be made on or before May 25. Sec., Dr. J. S. Rodman, 1600 Walnut St., Philadelphia.

NEBRASKA: Omaha, June 8-10. Supt., Dr. W. H. Wilson, Lincoln.

NEW JERSEY: Trenton, June 16-17. Sec., Dr. Alexander Macalister, State House, Trenton.

NEW YORK: Albany, Buffalo, New York and Syracuse, June 22-25. Sec., Dr. Harold Rypins, Education Bldg., Albany.

NORTH CAROLINA: Raleigh, June 22-26. Sec., Dr. Kemp P. B. Bonner, Morehead City.

NORTH DAKOTA: Grand Forks, July 7. Sec., Dr. George M. Williamson, 860 Belmont Ave., Grand Forks.

OHIO: Columbus, June 9-12. Sec., Dr. H. M. Platter, Hartman Hotel Bldg., Columbus.

OKLAHOMA: Oklahoma City, June 16-17. Sec., Dr. James M. Byrum, Shawnee.

OREGON: Portland, July 7-9. Sec., Dr. Urling C. Coe, Stevens Bldg., Portland.

PENNSYLVANIA: Philadelphia and Pittsburgh, July 7-11. Sec., Dr. J. George Becht, State Capitol, Harrisburg.

RHODE ISLAND: Providence, July 2-3. Dr. Byron W. Richards, State House, Providence.

SOUTH CAROLINA: Columbia, June 23. Sec., Dr. A. Earle Boozer, 505 Saluda Ave., Columbia.

TENNESSEE: Knoxville, Memphis and Nashville, June 12-13. Sec., Dr. Alfred B. DeLoach, 434 Madison Ave., Memphis.

TEXAS: Austin, June 23-25. Sec., Dr. T. J. Crowe, 918-19 Mercantile Bank Bldg., Dallas.

UTAH: Salt Lake City, July 7. Dir. of Regis., Mr. J. T. Hammond, 412 State Capitol Bldg., Salt Lake City.

VERMONT: Burlington, June 24-26. Sec., Dr. W. Scott Nay, Underhill.

VIRGINIA: Richmond, June 23-26. Sec., Dr. J. W. Preston, Shenandoah Life Bldg., Roanoke.

WASHINGTON: Olympia, July 6. Sec., Mr. William Melville, Olympia.

WEST VIRGINIA: Martinsburg, July 7. Sec., Dr. W. T. Henshaw, Charleston.

WISCONSIN: Milwaukee, June 30, July 1-2. Sec., Dr. Robert E. Flynn, 315 State Bank Bldg., La Crosse.

WYOMING: Cheyenne, June 8-10. Sec., Dr. J. D. Shingle, Citizens Bank Bldg., Cheyenne.

South Dakota January Examination

Dr. H. P. Kenaston, director, South Dakota Division of Medical Licensure, reports the oral, written and practical examination held at Pierre, Jan. 20-21, 1925. The examination covered 15 subjects and included 100 questions. An average of 75 per cent. was required to pass. Five candidates were examined, all of whom passed. Four candidates were licensed by reciprocity. The following colleges were represented:

PASSED	Year Grad.	Per Cent.
Loyola University	(1924)	80.9
Washington University Medical School	(1918)	86.6
Creighton Medical College	(1922)	86.6
University of Vienna, Austria	(1910)*	84.0
University of Budapest, Hungary	(1918)*	87.6

LICENSED BY RECIPROCITY	Year Grad.	Reciprocity with
Indiana University	(1923)	Indiana
University of Michigan Medical School	(1923)	Michigan
University of Minnesota	(1924)	Minnesota
Medico-Chirurgical College of Philadelphia	(1900)	Minnesota

* Graduation not verified by the American Medical Association.

Rhode Island January Examination

Dr. Byron U. Richards, secretary, Rhode Island Board of Health, reports the written and practical examination held at Providence, Jan. 2-3, 1925. The examination covered 7 subjects and included 70 questions. An average of 80 per cent. was required to pass. Of the 6 candidates examined, 5 passed and one failed. The following colleges were represented:

PASSED	Year Grad.	Per Cent.
Georgetown University	(1923)	90.0
Harvard University	(1923)	84.4
Tufts College Medical School	(1919)	86.2
School of Medicine and Surgery, Portugal	(1917)*	83.7
American University Medical School, Syria	(1912)	86.3

FAILED	Year Grad.	Per Cent.
University of Naples, Italy	(1922)*	78.9

* Graduation not verified by the American Medical Association.

Book Notices

ROENTGEN DIAGNOSIS AND THERAPY. By Arthur C. Christie, M.D., M.S., F.A.C.P., Professor of Roentgenology, George Washington University Medical College. Cloth. Price, $6. Pp. 320, with 180 illustrations. Philadelphia: J. B. Lippincott Company, 1924.

This is an enlargement of the author's manual of roentgen-ray technic, which appeared several years ago. That excellent but small work has now been elaborated and enlarged in a most satisfactory manner and presents the fundamentals of roentgen-ray technic, diagnosis and therapy. The presentation of the various phases of the work is logical, and the information in agreement with the most recent progress in roentgenology. The chapters on diagnosis are especially well written and the illustrations are of superior quality, pathologic changes being more clearly shown than is usually the case in such publications. The author is to be commended for having omitted material on antiquated apparatus of historical rather than practical interest, which so many works on the subject of roentgenology include. The book is a valuable addition to modern roentgenologic literature.

RHEUMATIC HEART DISEASE. By Carey F. Coombs, M.D., F.R.C.P. With an Introduction by F. J. Poynton, M.D., F.R.C.P. Cloth. Price, $4.50. Pp. 376, with illustrations. New York: William Wood & Company, 1924.

It is often stated in print that rheumatism affects not only the lining membrane of the heart but also the pericardium and the muscle; it causes a carditis. Having thus salved their consciences by this recognition of the extent of the infectious process, the writers generaly drop this feature, get back to the older conceptions, and discuss the disease as though the infection were at an end and little save the resulting mechanical defects remained to be considered. Coombs does not do this. He never loses sight of the element of infection and intoxication in rheumatic heart disease, whether he is considering pathology, progress, symptoms, prognosis or treatment. He consistently and persistently emphasizes this point. Rheumatism is a clinical entity with various manifestations, one of which is apt to be carditis, which may be fulminating and acutely overwhelming or insidious, recurring, and with valvular and muscular fibrosis as serious results. Coombs has been reared in an atmosphere charged with the spirit of clinical and laboratory investigation of rheumatism and heart disease. He has been trained in the school of Poynton, Paine and Lees. Further, he has had in Bristol a rich clinical experience, largely with children, by which he has been able to see many cases in their beginnings and to follow them sev-

eral years. His clinical impressions, founded on careful observation, fortified by good judgment and backed up by reliable statistics, are of real value. Another merit of the book lies in its insistence on the study and practice of preventive measures. Coombs endorses the American Associations for the Prevention and Relief of Heart Disease, and pleads for similar organizations in Great Britain. Most of the time honored symptoms, physical signs and pathologic changes are to be found in the volume, but its true merit lies in its presenting these and other facts from new points of view. We have marked many statements of opinion or even of fact with an interrogation or exclamation point, but we have oftener used the underscore to denote approval. The book is well worth while, for it is informing and rich in suggestive comments. Its influence will be distinctly freshening and stimulating.

PHYSIOLOGICAL PRINCIPLES IN TREATMENT. By W. Langdon Brown, M.A., M.D., F.R.C.P., Physician to St. Bartholomew's Hospital. Fifth edition. Cloth. Price, $3.75. Pp. 511. New York: William Wood & Company, 1925.

That the author knows how to write entertainingly and instructively about modern physiology as applied to medicine is shown by the fact that this is the fifth edition of a book written for "the busy practitioner aware that the physiology of his student days has been largely supplanted or supplemented, but who has not the time to acquaint himself with the changes, nor to deduce the points on which his clinical conceptions should be modified." This book may also be recommended to the recent graduate who has not had the good fortune of having his theoretical knowledge of physiology fertilized by applicaiton to clinical problems. It might also serve for inspiration to those teachers of physiology who are not as fortunate as is the author to combine the practice of medicine with the teaching of physiology. It should much improve their teaching methods.

LORD LISTER. By Sir Rickman John Godlee, Bt., K.C.V.O., M.S. Third edition. Cloth. Price $7. Pp. 686, with illustrations. Oxford: Clarendon Press, 1924.

The fact that this volume is in its third edition testifies to its popularity. The present edition is marked by the addition of a chapter on the present methods of treating wounds surgically. The name of Lister is one of the greatest in medical science, and the Godlee biography is a worthy tribute to the position held by Lister. It lacks perhaps somewhat in the romance that is considered an essential part of modern biography, but it is a presentation of knowledge based on actual fact.

AN INTRODUCTION TO PRACTICAL BACTERIOLOGY AS APPLIED TO MEDICINE AND PUBLIC HEALTH. A Guide to Bacteriological Laboratory Work for Students and Practitioners of Medicine. By T. J. Mackie, M.D., D.P.H., Robert Irvine Professor of Bacteriology, University of Edinburgh, and J. E. McCartney, M.D., D.Sc., Lecturer in Bacteriology, University of Edinburgh. Cloth. Price, $3.50. Pp. 297. New York: William Wood & Co., 1925.

This book is what it purports to be—a guide to practical bacteriology for medical students and practitioners. Although it adds one more to the already considerable collection of American, English and German laboratory manuals, it is not unwelcome in a science characterized by almost daily advances in laboratory technic. The manual contains sufficiently complete descriptions of the use of the microscope, the preparation of mediums, staining methods and the principal pathogenic micro-organisms, together with laboratory diagnostic procedures. Special emphasis has been laid on organisms found in tropical diseases. Some of the methods are not those regarded as standard in this country, notably those for the examination of water and milk. The paratyphoid group of bacilli is treated from a point of view different from that taken by Jordan and other American workers. The anaerobic methods, as given, do not include those now in use in most laboratories in this country. The authors cling to the old bacterial nomenclature, but perhaps this is a favorable rather than an adverse criticism, in view of the confusion that exists in the United States at this time. Laboratory directions are given in a clear and concise manner.

Medicolegal

Liability of Father to Pay for Operation on Son

(Bailey v. Yowell (Mo.), 266 S. W. R. 324)

The Springfield (Mo.) Court of Appeals, in affirming a judgment for $250 in favor of the plaintiff for services rendered by him as a surgeon and physician to a son of the defendant, says that the plaintiff's petition stated that at the instance and request of the defendant the plaintiff on a certain date performed an operation on a named minor son of the defendant and attended said minor son from that date until a certain other date. The defendant contended that the petition was based on the fact that the one to whom the services were rendered was the minor son of the defendant, and that the services were necessary, but that the proof did not sustain the allegation. However, it was to be noted that the petition charged that the services were rendered at the instance and request of the defendant, and if that was true, whether the one to whom the services were rendered was a minor or was of full age was immaterial. The allegation was broad enough to sustain a judgment based on the services rendered, whether the one to whom they were rendered was a minor or an adult. Again, one instruction told the jury that if at the time of the operation the son was a minor and his father authorized another physician to take him to the plaintiff for treatment, they should find for the plaintiff, while another instruction told them that if they should believe that the son was over 21 years of age, and they should further find that before the operation the father told such other physician to have the operation performed and promised to pay for it, they should find for the plaintiff. The issue of the operation being necessary was not presented to the jury, but the instructions required that, whether the son on whom the operation was performed was a minor or not, in order to warrant a recovery by the plaintiff, the evidence must show that the father had authorized the son to be taken to the plaintiff for treatment. The only difference in the two instructions was that if the jury should find that the son was over 21, to find for the plaintiff the jury must not only find that the father directed that the operation be performed, but that he must also have promised to pay for it. These instructions were not prejudicial to the defendant. The evidence in this case would have sustained the verdict on either theory submitted by the instructions.

Liability of Medical Examiners in Lunacy

(Brush v. Lindsay et al. (N. Y.), 206 N. Y. Supp. 304)

The Supreme Court of New York, Appellate Division, Second Department, says that plaintiff's counsel in his opening address to the jury, in this action for false imprisonment in which a judgment for $250,000 damages was asked for, stated that the defendants were physicians and medical examiners in lunacy; that without making any examination of the plaintiff they made affidavits that she was insane and oath that service on her of notice of the application for commitment would aggravate her condition and cause serious trouble; that, relying on the affidavits or certificates of the defendants, a county judge made an order committing the plaintiff to one of the state hospitals for the insane, dispensing with such notice; that the plaintiff was forcibly taken from her home to the hospital, without notice of any kind, and was kept in the hospital closely confined for ten years less two months, when she was released as sane on a habeas corpus proceeding instituted by a nurse who believed her to be sane. In her complaint the plaintiff alleged that the statements made by the defendants in their affidavits were false, as the defendants knew, and that the defendants made the affidavits or certificates wilfully and maliciously, for the purpose of injuring her and causing her to be taken to and confined in an asylum for the insane. At the close of the opening statement to the jury of plaintiff's counsel, defendants' counsel moved, on the opening and the pleadings, that the complaint be dismissed because it affirmatively appeared

from the complaint and the opening that the plaintiff was alleged to have been incarcerated in May, 1910, and the statute of limitations had run against the action alleged in the complaint, this action having been commenced in December, 1920, nine months after the plaintiff's release from the state hospital. The motion was granted; but the judgment dismissing the plaintiff's complaint is now reversed, and a new trial granted.

The defendants denied the truth of the charges made against them, and this court does not pass on whether they were true or untrue; in other words, it is not deciding the case on the merits. What it decides is that the complaint was erroneously dismissed on the ground stated. It was not enough for the defendants to say that the responsibility for the plaintiff's continued imprisonment was on the hospital authorities. It was immaterial how many others may have been at fault, if the defendants' acts were an efficient cause of the injury. With reference to the defendants' contention that the plaintiff's action was barred by the two-year statute of limitations, that depended on the date when her cause of action accrued. If the defendants' liability terminated on the day the plaintiff was committed to the hospital in 1910, it would appear that they were right in their contention. If, however, her imprisonment was illegal from the beginning, and the defendants' wrongful acts were the cause of the loss of liberty, the illegal imprisonment constituted a new trespass every day it continued. The gist of the action for false imprisonment is the unlawful detention, and certainly as to unlawful detention within two years before the commencement of the action the plaintiff was not barred by the two-year statute of limitations. As to her right to recover for detention prior to the two-year period, the court does not pass on this question, it not being necessary to a decision on this appeal. Furthermore, whether the plaintiff was prevented in any way from bringing an action during her confinement in the hospital, and whether, if such was the case, it was chargeable to the defendants so as to remove the toll of the two-year statute of limitations, were left for determination by the trial court on the evidence. Likewise, the claim advanced by the defendants that the plaintiff should have availed herself of the means to recover her freedom recited by counsel might be a subject of investigation at the trial of the issue. It is the duty of one injured to minimize the injury if it can be reasonably accomplished. It might be that the plaintiff's failure to take action might be considered by a jury in mitigation of damages. The court does not know. But the court cannot assume on this motion that the plaintiff consented to her imprisonment or voluntarily waived opportunity to procure her release.

Roentgen-Ray Burns from Fluoroscopic Examination

(Stickney v. Congdon et ux. (Wash.), 228 Pac. R. 849)

The Supreme Court of Washington, in reversing a judgment in favor of the defendants and in remanding the cause for a new trial, says that this action was against a physician and surgeon to recover damages for injuries caused by burning with a roentgen-ray machine while the plaintiff was under a fluoroscopic examination with a machine owned and used by the defendant. The principal defense, and that which no doubt accounted for the verdict for the defendants, was that some unknown factor, probably a fluctuating line current, which the physician could not reasonably have foreseen, and for which he should not be held responsible, entered in and caused the burn. The machine was of standard make and equipped with all the usual controls and gages designed for the purpose, and sufficient to apprise the operator of the amount of current being used and to enable him to regulate it. The gages and controls were situated in a room distant and separated by a hallway from the dark room where the ray was applied to the patient—a not unusual manner of installation—and the first question presented was whether, in the exercise of reasonable care, an operator or technician should have been kept stationed at the gages and controls, in order to keep watch of the current being used, and to regulate it, if necessary, in order to keep within the zone of safety. There was then no stabilizer known or in common use, though the evidence indicated that a practical stabilizer had since been perfected. There was ample evidence that, before beginning the examination, the settings were properly made on the machine so as to deliver under ordinary conditions only the required current; but thereafter, and throughout the examination of the patient, both the physician and his assistant, the operator of the machine, remained at all times in the dark room where the ray was being applied, and no one was stationed at the gages and controls to observe and regulate the current. There was no testimony tending, even remotely, to show that when so installed it was usual or customary to leave the gages unobserved during the operation, or that such a course was recognized in the profession as being proper practice under any conditions.

(1) The gages and controls, being parts of the machine and its equipment, manifestly made a part in order that they might be used; (2) it being shown that by their proper use the results here complained of could not have happened; and (3) there being no denial of the positive testimony that the gages should have been under the observation of some competent person during the operation of the current, there was no conflict in the testimony on the question of negligence; and it would seem that, if such an instruction had been asked for, the court would have been required to tell the jury that negligence had been established as a matter of law, notwithstanding the cases are rare in which such an instruction may be given. But no such request was revealed. The point was, however, saved by the motion for a new trial, based, among other things, on the insufficiency of the evidence to support the verdict. If there were a conflict in the evidence this court could not say that the trial court abused its discretion in denying such a motion for a new trial; but there was no conflict. And where the interested witness rule does not apply, why should negligence not be dealt with as this court has so often dealt with contributory negligence, and a new trial be directed by this court?

Complaint was made because, in instructing the jury, the trial court refused to apply the rule of res ipsa loquitur ("the thing speaks for itself"); but where the evidence is in any degree conflicting, the court may refuse to apply that rule in its instructions.

Lost Sponge—Liability of Subsequent Physician

(Parker v. Bowen (Vt.), 126 Atl. R. 522)

The Supreme Court of Vermont says that the defendant in this action for alleged malpractice had professional charge, as a physician, of the plaintiff after an abdominal operation performed by another physician or surgeon. It was admitted that, so far as this case was concerned, the defendant's responsibility did not begin until such surgeon turned the patient over to him after the operation. Gauze sponges were used during the operation, and when the patient was turned over to the defendant one or more cigaret drains, made of rolled gauze and gutta percha, were left sticking out of the wound to take care of the drainage. The plaintiff contended that there were two of these drains, while the defendant insisted that there was only one. The plaintiff did not make a good recovery, and it turned out that, without the fault or knowledge of the defendant, a sponge had been left in the cavity at the time of the operation, and some fifteen weeks later worked to the surface and was removed.

The plaintiff contended that one of the cigaret drains had been allowed to sink into the wound and disappear, and that it was the cause of her trouble, and that it was this drain that finally appeared and was removed. When it appeared at the trial that the defendant contended that this object was a sponge, and not a cigaret drain, the plaintiff was allowed to amend her complaint so as to charge malpractice in not discovering the presence of a sponge in the wound, and in not sooner removing it. The defendant excepted, urging that the new count set up a new cause of action, which was not allowable. The established rule is that the true test is whether the proposed amendment is a different matter or the same matter more fully or differently laid. The term "matter" as here used refers to the substantial facts which lie at the basis of the plaintiff's claim, and not those orig-

inally alleged. Applying this rule, it becomes very apparent that this amendment was properly allowed. The basis of the plaintiff's claim throughout was the defendant's failure to discharge his professional duty in caring for her as his patient. The plaintiff by the amendment did not change the basis of her claim; she adhered to the injury originally declared on, and altered only the mode in which the defendant caused the injury. The jury found by a special verdict that the object removed was a sponge, and brought in a general verdict for the plaintiff.

The trial court charged the jury to the effect that the defendant was liable if he failed to use the requisite care and skill in discovering the presence of a foreign body in the wound, whether it was a drain or a sponge. To this instruction the defendant excepted on the ground that there was no medical testimony tending to show that the defendant was at any fault in connection with the presence or removal of a sponge in the patient's body. The plaintiff frankly admitted that if such medical evidence was lacking the defendant was entitled to a reversal. It is a well known rule of appellate practice that the excepting party takes the burden of making error appear. But when the excepting party takes the position that there is no evidence to establish a material fact, and on that question tenders the transcript, it becomes the duty of the other party to point out such evidence. The plaintiff attempted to comply with this requirement, and pointed to the testimony of a physician as supplying the evidence that the defendant said was lacking; but the court cannot sustain this contention. The physician testified to the effect that the defendant's treatment was medically and surgically proper. The nearest he came to making the defendant chargeable for malpractice was when he testified as to what he would have done in circumstances shown by the evidence. But the defendant was not to be judged by what that physician would have done. The standard by which the defendant's work was to be judged was the care and skill usually exercised in like cases by physicians and surgeons in the same line of practice in that general neighborhood. The witness's methods might have been above that standard, and could not be substituted therefor.

Nor did the result afford evidence of malpractice. There being no competent evidence tending to establish liability on the basis of the sponge, it was error to submit that issue to the jury. The defendant's motion to set aside the general verdict and for a judgment for the defendant on the record should have been granted. Judgment reversed, and cause remanded.

Appendicitis Held to Have Been Caused by a Blow

(Clark v. Department of Labor and Industries (Wash.), 230 Pac. R. 133)

The Supreme Court of Washington says that respondent Clark, while an employee of the Diamond Match Company and engaged in assorting blocks conveyed from saws, was struck on the right side of the abdomen by a block thrown from a saw. Almost immediately she complained of severe pain, and suffered from nausea. The following morning her physician determined that she was suffering from acute appendicitis. This condition continued for eleven days, when an appendectomy was performed. The appendix was three times the normal size, with reddened veins. A claim for compensation was presented to the Department of Labor and Industries, under the workmen's compensation act, but was rejected on the ground that the "claimant's condition was not the result of the accident, within the meaning of the compensation act." An appeal was taken to the superior court, which after a trial without a jury, found and concluded that respondent's injury caused appendicitis, and that she was entitled to compensation. From that judgment came this appeal. While the respondent contended that the blow received was the cause of the appendicitis, the appellant contended that the blow did not, and could not, produce appendicitis, or be its contributing cause.

There was a direct conflict between the testimony of the physicians. Those for the respondent, including the physician who treated her immediately after the injury and continued the treatment until after the operation, testified that appendicitis can be superinduced by trauma. On the other hand, the chief medical officer of the department seemed to be very positive that appendicitis does not result from accident; that nothing could change his mind on that subject. The view of the trial court and the physicians testifying for the respondent was fortified by an article in THE JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION of May 19, 1923, by Dr. Luddington of New Haven, Conn. In that, medical writers of world-wide fame were quoted to the effect that appendicitis may be, and often is, caused by a blow on the abdomen, or severe muscular strain. Dr. Osler was quoted to the effect that "trauma plays a very definite rôle, and in a number of cases the symptoms have followed very closely a fall or a blow." This article in itself is very logical and convincing. On the whole, therefore, the supreme court is satisfied that the finding of the trial court reversing the Department of Labor and Industries, and in favor of the respondent, was well sustained by a preponderance of the satisfying evidence, and that the respondent was entitled to recover compensation.

Society Proceedings

COMING MEETINGS

AMERICAN MEDICAL ASSOCIATION, Atlantic City, N. J., May 25-29. Dr. Olin West, 535 North Dearborn Street, Chicago, Secretary.

American Association for the Study of Allergy, Atlantic City, May 26. Dr. W. W. Duke, Federal Reserve Bank Bldg., Kansas City, Mo., Sec'y.
American Association for the Study of Goiter, Atlantic City, May 26. Dr. J. D. Moschelle, Odd Fellows Bldg., Indianapolis, Ind., Secretary.
American Gastro-Enterological Association, Atlantic City, May 25-26. Dr. John Bryant, 338 Marlborough Street, Boston, Secretary.
American Laryngological, Rhinological and Otological Society, Atlantic City, May 22-25. Dr. R. L. Loughran, 145 West 58th Street, New York, Secretary.
American Proctologic Society, Atlantic City, May 25-26. Dr. J. F. Montague, 540 Park Avenue, New York, Secretary.
Association for the Study of Internal Secretions, Atlantic City, May 26. Dr. F. M. Pottenger, Title Insurance Bldg., Los Angeles, Secretary.
Conference of State and Provincial Health Authorities, Montreal, Canada, June 4-5. Dr. Richard M. Olin, State Commissioner of Health, Lansing, Mich., Secretary.
Maine Medical Association, Bar Harbor, June 23-25. Dr. B. L. Bryant, 265 Hammond Street, Bangor, Secretary.
Massachusetts Medical Society, Boston, June 9-10. Dr. W. L. Burrage, 182 Walnut Street, Brookline, Secretary.
Medical Library Association, Atlantic City, May 25-26. Miss H. Wilson, 535 N. Dearborn Street, Chicago, Secretary.
Medical Women's National Association, Atlantic City, May 25-26. Dr. B. M. Haines, Michigan Department of Health, Lansing, Secretary.
Montana, Medical Association of, Lewistown, July 8-9. Dr. E. G. Balsam, 222 Hart-Albin Building, Billings, Secretary.
New Jersey, Medical Society of, Atlantic City, June 18-20. Dr. J. B. Morrison, 97 Halsey Street, Newark, Secretary.
North Pacific Pediatric Association, Portland, June 29. Dr. E. J. Barnet, Paulsen Building, Spokane, Wash., Secretary.
Pacific Northwest Medical Association, Portland, Ore. June 29-July 1. Dr. Frederick Epplen, Paulsen Building, Spokane, Wash., Secretary.
Rhode Island Medical Society, Providence, June 4. Dr. J. W. Leech, 369 Broad Street, Providence, Secretary.
West Virginia State Medical Association, Bluefield, June 9-11. Mr. Sterritt O. Neale, 211 Smallridge Bldg., Charleston, Executive Sec'y.

ASSOCIATION OF AMERICAN PHYSICIANS

Fortieth Annual Meeting, held in Washington, D. C., May 5-7, 1925

DR. LEWIS A. CONNER, New York, presiding

Radium in Opacity of the Cornea

DR. FRANCIS H. WILLIAMS, Boston: I have been using radium in the treatment of opacity of the cornea. In one case, a man, aged 63, was blind in the right eye, and unable to see his finger, when held a few inches away, with his left eye. The opacity covered the whole of the cornea of the left eye, and was most dense in the central portion. He had three treatments, averaging six minutes each, over a period of six weeks. At the end of the treatment he had good vision. He can read his newspaper without, but better with glasses, suited to his age.

Treatment of Scarlet Fever by Refined and Unrefined Antitoxic Serum

DR. WILLIAM H. PARK, New York: During the past year we have treated more than 100 cases with scarlet fever anti-

toxic serums. Up to March we treated only the severe cases, but since then we have treated all patients who had a rash and a temperature above 100 F. It is possible to produce a serum that has both bactericidal and antitoxic substances, but at present the serums in use are antitoxic only. Scarlet fever antitoxin can be refined successfully in the same way as diphtheria antitoxin. The antitoxic serum used in these cases was partly refined and partly crude. The potency of the serum is measured by the number of Dick skin doses a definite quantity neutralizes or by the dilution of the serum that still gives the Schultz-Charlton skin blanching reaction in a case of scarlet fever. A tentative unit has been adopted which neutralizes 100 Dick skin doses. The dosage at present, when given intravenously, is from 1,500 to 3,000 units, and when given intramuscularly, from 3,000 to 10,000 units. The results following a sufficient intravenous injection are very striking. Within two or three hours the patient feels decidedly better. The soreness of the throat is less and the intensity of the rash begins to lessen. The temperature, after a slight initial rise, falls about one degree each hour. If the dose has been sufficiently large, the rash has largely disappeared. The patient will feel and look like a convalescent. Intramuscular injection produces similar results, but not so promptly. These results are similar to the best of those reported by Moser, Schick and others with the Moser serum. A measure of a sufficient dose is the Dick test. Two hours after a sufficient intravenous injection, the Dick test is negative; after an intramuscular injection, and depending on the amount, it will not be negative for from six to eighteen hours. Antitoxic serum has little or no effect on the complications of scarlet fever, either in those due to other types of streptococci, or in those due to the scarlet fever streptococcus. Our best hope is from the early use of antitoxin, so that the invasive complications will not develop. The only difference in the use of refined and unrefined serum was that the severity of the serum reactions was less with the refined serum, and the quantity of fluid was less. Every case of uncomplicated scarlet fever, however severe, has cleared up and has had the temperature fall to normal or nearly normal when a sufficient dose was given. It should be given exactly as diphtheria antitoxin is given in diphtheria. Our feeling is that the scarlet fever antitoxin is of use as long as the rash is present. When the rash has disappeared, there is no use in giving the antitoxin. It is too early to speak of the extent of the prevention of complications by the antitoxic serum.

Treatment of Scarlet Fever with Scarlatinal Antitoxin

DRS. FRANCIS H. BLAKE and JAMES D. TRASK, New Haven, Conn.: From our results it may be concluded that the antitoxin promptly cures scarlet fever, that although it has no direct curative effect on septic complications it indirectly benefits them during the acute stage of the disease, presumably by curing the scarlet fever, and that it is of no demonstrable value in postscarlatinal sepsis after the rash has disappeared. Of fifty-seven uncomplicated cases, five subsequently developed mild complications, from which the patients satisfactorily recovered. Of forty-eight complicated cases, five developed additional complications from which the patients recovered. The amount of serum required to cure scarlet fever varies with the size of the patient, the severity of the disease, and the antitoxin content per cubic centimeter of serum. An antitoxin to be therapeutically efficient should contain at least 12,500 minimal blanching doses per cubic centimeter. This is equivalent to at least 10,000 skin test neutralizing doses per cubic centimeter, or 100 of the new units which the U. S. Public Health Service proposes to adopt. Maximal figures for a therapeutically efficient antitoxin given intramuscularly are: from 30 to 80 c.c. for children, and from 35 to 100 c.c. for adults; i. e., from 3,000 to 10,000 of the new units. This amount undoubtedly can be reduced by intravenous injection. Treatment is best carried out by estimating the amount of antitoxin required in each case, and giving the full dose as soon as the diagnosis is made.

Experimental Erysipelas

DR. H. L. AMOSS and K. E. BIRKHAUG, Baltimore: Forty strains of erysipelas streptococcus were collected from various places in America. They fell into one group which was quite different from the scarlet fever streptococcus or from that associated with cellulitis, dermatitis and tonsillitis, and with some similarity antigenically to the streptococcus in nasal sinusitis. Experimental erysipelas was produced in rabbits and dogs. Twenty-four hours after the injection, the lesion produced has definitely raised edges, and is very warm and deep red, more so along the margin than in the center. In forty-eight hours it spreads and reaches a diameter of 9 cm. A deviation from the ordinary lesion is the development of a phlegmon. This happens when the streptococci are injected subcutaneously instead of intradermally. The pathologic picture twenty-four hours after injection of 0.1 c.c. shows the corium to be filled completely with leukocytes, this infiltration extending well down into the subcutaneous tissue. There was a marked outpouring of mononuclear cells, together with the lymphoid cells, which corresponds with the picture seen in human erysipelas. Even in the lymphatics there are found large numbers of streptococci, but none in the blood stream. Experimental erysipelas was produced with dilutions as high as 1:500. A large group of rabbits and some dogs were immunized with seven strains of erysipelas streptococcus, and after three months a titer of 1:2,500 by the Dochez method was obtained. Local passive immunity was demonstrated, as was also general passive immunity. The findings show that there is no serologic relationship between scarlet fever and erysipelas. The results with immune serum are very striking and very promising, and follow identical lines as the work suggested by Park and Blake in the use of antiscarlatinal serum.

State of Cardiac Muscle in Hypertrophy and Atrophy

DRS. HOWARD T. KARSNER, O. SAPHIR and T. WINGATE TODD, Cleveland: A study was made of three hearts, selected so as to be free from conditions other than those to be studied. The normal heart weighed 300 gm., the hypertrophic 500 gm., and the atrophic, 165 gm. More than 2,000 accurately measured fields were studied in each heart. In the normal heart those fields which contained twelve fibers were in the majority; in the hypertrophic heart those which contained eleven fibers constituted the majority. In the normal heart, fibers measuring 0.5 unit constitute the majority of the fibers; in the hypertrophic heart, those of 0.9 unit, and in the atrophic heart, those of 0.4 unit. In the atrophic heart, the nuclei were increased in number far beyond what might be expected from shrinkage of the fibers and heart bulk. We can conclude with great confidence that in hypertrophy of the heart the increased bulk is due solely to an increase in the size of the preexistent muscle fibers. In atrophy there is a decrease in size of the fibers and an actual disappearance of fibers, due, in all probability, to the autolytic processes studied by Bradley and his collaborators. In atrophy there is also an increase in the number of nuclei, but whether this indicates an attempt at regeneration or is retrogressive in character cannot be stated with certainty. Furthermore, in both hypertrophy and atrophy, there is an approach toward uniformity in the size of the fibers, which, it is believed, represents an entirely new conception of variability and adaptation.

Correlation Between Pharmacology and Pathology of Diphtheritic Heart

DR. C. W. EDMUNDS and R. J. COOPER, Ann Arbor, Mich.: We injected dogs with diphtheria toxin in doses of 0.1 c.c. at intervals of two or three days. The dogs survived only 0.3 c.c. at the most. Immediately after the pharmacologic experimental results were obtained, the hearts were examined pathologically. They showed the same features as were obtained in diphtheria in human beings, profound Zenker's necrosis, a greater or less degree of fatty degenerative infiltration, and very marked hemorrhages. From the pharmacologic standpoint the animals could be divided into three groups. The first group comprised those dogs that were used two or three hours before they would have died; they could just stand up. The third group comprised the dogs that died on the table. There was an intermediate group of dogs that were comatose and could be operated on without an

anesthetic. In the third group we employed most radical means of resuscitation—the intravenous injection of epinephrin and massage of the heart—but in only one animal were we able to recover the heart at all. The heart muscle of all these dogs was very flabby and pale, and gave practically no response at all. The first group simulated the clinical conditions most closely, and circulatory failure had gone on to a considerable degree. They had to have an anesthetic, but they would have died in two hours. They had very marked hemorrhages from the intestine and from the respiratory passages. The hearts of these animals responded to the action of drugs as normal hearts do. The injection of digitalis was followed by an increase of blood pressure. Injection of epinephrin was followed by a rapid and satisfactory increase in blood pressure; pituitary preparations also elicited a favorable response; salt solution was not very satisfactory. The pressure was scarcely raised at all by its use, nor was it with 6 per cent. acacia. Ten per cent. glucose was most satisfactory. These animals, which were in conditions comparable to those of patients met in the clinic, responded normally to the drugs, although pathologic reports showed that many of them showed extreme necrosis, etc. The intermediate group, consisting of those in coma, was perhaps the most interesting. If we could get 10 per cent. glucose solution into the circulation before the heart stopped, we never lost a single animal. The blood pressure was not always raised very much, but in every case the heart was greatly strengthened, and the increase in strength was well sustained. Ringer's solution and acacia had no such effect. After we had secured an increase in blood pressure by the use of glucose, then digitalis, epinephrin or pituitary extract acted in a perfectly normal manner. Some of the animals with an initial blood pressure of 5 mm. of mercury showed a rise to 100 or 120, following 10 per cent. glucose and digitalis.

Manner of Death in Coronary Thrombosis

DR. FRANK T. FULTON, Providence, R. I.: A large percentage of patients with coronary thrombosis die as the result of that condition; the death is frequently sudden. Death often occurs when the patient seems in a fair way to recover. The mechanism of death in these cases is an interesting problem. Coronary thrombosis with an infarct has been considered a sufficient cause of death, but the mechanism of death is not revealed by the presence of the infarct. Deaths occurring as a result of coronary thrombosis may be divided into three groups. 1. The deaths in which the immediate cause is more or less remote from the original lesion are not strictly cardiac deaths. 2. Damage to the heart as the result of the cutting off of the blood supply may lead to progressive weakening of the heart muscle, and death occurs as it does in any other instance of myocardial failure. 3. The heart ceases to beat because of some interference with the mechanism with which the heart beat is maintained in its orderly sequence. The most important causes of sudden death are heart rupture, ventricular fibrillation, pulmonary embolism and heart block. Whether death occurs as the result of vagus inhibition, as Sir Clifford Allbutt has insisted, is very difficult of demonstration. In most cases of instantaneous death there is no accompanying pain. The importance of ventricular fibrillation as a cause of death is not generally recognized. In experimental observations it has long been noted as a terminal event. When one considers the rarity of ruptured heart, of a large pulmonary embolus, and of thrombosis of the right coronary artery, and the comparative frequency with which ventricular fibrillation occurs when an artery is experimentally occluded, there would seem good reason for believing that ventricular fibrillation is the most common cause of sudden death in this condition.

Sudden Death Due to Exacerbations of Latent Syphilitic Myocarditis

DR. A. S. WARTHIN, Ann Arbor, Mich.: This report is based on the pathologic findings in seven cases of sudden death, all coroner's cases. At the necropsy they all showed the same general pathologic picture: a dilated heart, very marked dilatation of the left ventricle, flattening of the papillary muscles, and dilatation of the right ventricle also. They all showed mottling of the heart muscle, especially marked in five cases. There were light areas throughout the heart muscle without any hemorrhagic zone. They were not translucent, like fatty areas. They were slightly cloudy, and more yellowish. They looked like infarcts, without any hemorrhagic zone. The aorta showed no marked evidence of arteriosclerosis, and there was no coronary sclerosis or thrombosis. The only picture in the gross was that of a myocarditis. Microscopically, there were localized areas of infiltration throughout the heart muscle. These appeared largely as areas of lymphocytic or mononuclear infiltration. There were also areas in which there were many polymorphonuclear cells. In every one there was a subendothelial infiltration of cells of the large mononuclear type. The same type of infiltration extended down the heart muscle. Infiltration of the stroma and the very marked edematous appearance of the stroma characterized these cases. No eosinophils were found. There was no resemblance to rheumatic endocarditis, and no Aschoff bodies, abscess or suppuration was seen. The heart muscle showed very little reaction to the majority of these infiltrations, but they all showed older fibroid areas. The acute process predominated in all of these, but there was a very slight latent process. The whole process is a myocardial one. In these areas, spirochetes were found in great numbers in every case. This condition is one that is not recognized by clinicians at all, and is recognized by only a few pathologists. My experience shows that syphilis of the heart is the most common cause of death from syphilis. It is one of the most important clinical conditions, and death arises from cardiac syphilis in several ways. The most common is the old fibroid heart in which there has been an atrophy of heart muscle and a gradual loss of compensation, so that ultimately cardiac insufficiency arises as the result of the contractile condition on the fibers of the heart. Syphilis may also lead to disease of the coronaries, and death may also come that way. Coronary syphilis has been the least common form next to gummatous myocarditis in my experience. This type of an acute exacerbation of a chronic syphilis is a very important form of syphilis, which I think is not recognized either clinically or pathologically. Section of the aorta disclosed the presence of microscopic lesions, and we found spirochetes in every one of the aortas, but the lesion in the aorta was only microscopic. The predominance of the myocardial lesion constitutes the most important factor in these cases.

DISCUSSION ON PAPERS OF DRS. FULTON AND WARTHIN

DR. T. B. FUTCHER, Baltimore: A man between 50 and 60 years of age, rising in the morning, was on his way to the bathroom and collapsed. I saw him in consultation about 10:30 that evening. He was in a great state of collapse: his pulse was weak, 10 to the minute. On examination, the heart was somewhat dilated. There was a pericardial friction rub over the precordium, and we suspected that he had had a coronary occlusion with an infarct of the heart muscle, and that probably a pericardial rub had developed over the infarcted area. He died forty-eight hours later. At the necropsy it was found that the right ventricle had become infarcted over a large area, had ruptured, and the heart was filled with blood. He had developed a hemopericardium as the result of the rupture of the infarcted area.

DR. J. B. HERRICK, Chicago: I agree with Dr. Fulton as to the result of his analysis of the cause of death in coronary occlusion. I think that the majority of those who die immediately or very soon after the onset have ventricular fibrillation as the cause of death, but there is a large number also who, as Dr. Fulton pointed out, live for many hours, many days, or months. Not a few of these die suddenly, and there again ventricular fibrillation is the cause of death. Rupture, of course, occurs, but with not very great frequency. In many instances the patient may have recovered, and may live for many days, weeks or months, though with evidence of a weak heart. He may die of an ordinary, everyday attack of cardiac failure, with varying degrees of cyanosis, dyspnea, and also with the manifestations of arrhythmia. In many of the cases there may be the manifestation of auricular fibrillation;

in others, the electrocardiogram shows bizarre ventricular manifestations, and in some of the more serious cases, curves of low amplitude. These patients may die in the ordinary manner in which a patient dies from myocarditis. The assumption is that there are patches of fibrosis with perhaps a parietal or partial aneurysm. In some of these patients, who live for a long time after the primary accident, there is a second coronary obstruction. The condition in the coronary arteries is not limited to a single artery that was first obstructed; obstruction may occur in other branches. In one case, I saw at necropsy not only the old embolic obstruction, but a new, fresh obstruction in another branch of the coronary. These cases of recurrent coronary obstruction are, I am inclined to believe, not so very uncommon.

DR. WADE H. BROWN, New York: The lesions in the cases of myocarditis reported by Dr. Warthin raise a very important point in the pathology of syphilis. We have all been taught that the histologic lesion of syphlis is a round cell infiltration which tends to be perivascular; and so it is, so far as the characteristic or typical lesion of syphilis is concerned. There is, however, in our experience in dealing with experimental animals another type of reaction, and that is a lesion that is not circumscribed nor perivascular, but one in which the round cell infiltration tends to be diffuse, and in which the element of edema is a prominent feature. This reaction in the experimental animal occurs particularly as what we may term a "critical" reaction. Dr. Warthin has presented these cases as instances of sudden death from an exacerbation of a latent syphilis, and the reaction may be regarded as critical. When I say a critical reaction, I mean this: while, as a rule, the lesions in the experimental animal resolve slowly and imperceptibly, in some cases they grow rapidly, and suddenly turn and undergo resolution. The development of so-called malignant syphilis falls into a similar category. In these two conditions there is a reaction very much like that described by Dr. Warthin. Resolution by crisis is marked by a diffuse reaction with edema and with polymorphonuclear infiltration; in like manner the lesions that are of a malignant type, even before they ulcerated, may not show the characteristic perivascular picture, but the picture shown by Dr. Warthin, and the same lesion is not infrequently found as the very earliest histologic change in the development of the syphilitic process. This may be one reason why these cases are not more frequently recognized. They do not at first sight suggest syphilis, and that is because we have another picture in our mind for syphilis; but as a critical syphilitic reaction, this is just as typical for syphilis as the focal round cell infiltration is for the ordinary type of syphilitic process.

DR. EDWARD P. CARTER, Baltimore: I would like to ask as to the previous treatment of these persons in whom Dr. Warthin so easily demonstrated the presence of spirochetes. I have for some time held the opinion that there was a perfectly definite clinical picture of syphilitic myocardial disease, and have been much interested in the reaction of a number of my colleagues to my point of view. In the cases that I followed there was all the evidence of a progressive myocardial failure, not as an acute, but as a chronic process, with no evidence at any time of endocardial disease. In each instance, in three cases in which the diagnosis was postulated before death, the lesion found post mortem agreed closely with the lesions described some years ago by Dr. Warthin, as characterized by infarction and thrombosis within the ventricle. One case was associated with multiple emboli and numerous pulmonary infarctions. To our great disappointment, we have been unable to demonstrate spirochetes in the histologic sections. Whether or not intensive treatment makes a difference in the facility with which the spirochetes may be demonstrated, I am not clear. Some of Dr. Warthin's slides suggest an exacerbation as an acute process of the lesions described by Stoeckenius three or four years ago in four instances of very early secondary syphilis. I should like to know whether it is the impression that energetic, specific treatment modifies the facility with which one can demonstrate the presence of spirochetes, and whether in the experimental animal, in which one can control the intensity of the infection, it is possible to demonstrate sucessfully the presence of spirochetes in the myocardium.

DR. E. S. KILGORE, San Francisco: In several of the cases described by Dr. Warthin, the patients complained of pain in the right arm. Was there anything about the distribution of the lesions which could be correlated with that?

DR. DAVID RIESMAN, Philadelphia: I might cite a case which bears out what Dr. Herrick said as to the recurrence of coronary thrombosis. At the same time, the case illustrates a method of treatment that proved successful. The patient, who was an excessive smoker, and had lost a good deal of money through the deflation after the war, had angina pectoris and hypertension. One day he had a terrific attack of pain, during which his blood pressure fell from 220 to 80. When I saw him, a day or a day and a half afterward, he was still in fearful agony, the pain having failed to yield to morphin and other sedatives. Drugs seemed to be of no avail; indeed, there were few left that had not been used, so I ordered leeches applied; altogether, twenty-three were placed on the precordia. The pain promptly disappeared, and the man rapidly recovered from his attack. About a year later, exactly the same thing happened. His blood pressure fell again. He had, as in his first attack, fever, leukocytosis and a slight pericardial friction rub. Of his own accord he asked to have the leeches applied again. We covered the whole precordia with them; he recovered and is still living in apparently good health two years after the second attack.

DR. A. S. WARTHIN, Ann Arbor, Mich.: In the acute cases there was no thrombosis. In the chronic cases there were repeated instances of thrombosis of the left ventricle. With regard to the symptom of pain in the right arm, which a number of the patients complained of, the lesions were chiefly in the left ventricle wall. In only one case was there marked diffuse involvement of the heart. I have no especial evidence of any correlation between the pain and the involvement of the heart muscle itself. I think that Dr. Brown's explanation of this condition is the true one, and I have come to the same conclusion myself. The polymorphonuclear character of the infiltrations bothered me at first. I had had very little material from secondary syphilis, but the lesions in secondary syphilis are polymorphonclear in type. Also, the lesions in umbilical cord syphilis are practically wholly polymorphonuclear. I have found that umbilical cord syphilis is associated with enormous numbers of spirochetes, so that I would advise any one to begin with the umbilical cords, because it is the easiest thing in the world to demonstrate spirochetes in the polymorphonuclear infiltration in congenital syphilis. I want to say again that the demonstration of spirochetes is undoubtedly a technical trick. The staining of spirochetes by the silver staining methods requires a great deal of experience in watching the reduction and in catching these things just at the right time. Apparently, this is acquired only after a certain amount of experience. In regard to the treatment: The best cases that I have had for the demonstration of spirochetes throughout the tissue have been five cases of arsphenamin poisoning. The kidneys were full of spirochetes, which stained well until the tubules of the kidney were reached, where they did not stain well. There was an enormous output of spirochetes through the kidneys in these cases of arsphenamin poisoning. They were all cases during and just as the roseolar eruption was appearing.

(To be continued)

Tetanus from Vaccination Dressings.—The Public Health Service deprecates the use of any kind of shield as a vaccination dressing. The employment of such a shield tends to prevent evaporation; to retain heat, moisture or discharges, with a consequent softening of the vesicle; to obstruct lymphatic drainage; to produce hyperemia, and to create conditions apparently favorable for the development of bacterial invasion, especially by the tetanus organism. The smallest single site insertion compatible with a successful take and with no immediate dressing whatever is believed to be the best method of vaccination in the majority of cases.—*Pub. Health Rep.* **40**:559 (March 20) 1925.

Current Medical Literature

AMERICAN

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Titles marked with an asterisk (*) are abstracted below.

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Hydatid Cyst: Microchemical Reactions of Cyst Wall. G. Cameron and A. S. Fitzpatrick, Melbourne, Australia.—p. 227.
*Origin of Adenomatous Goiter. B. S. Kline, Cleveland.—p. 235.
*Etiology of Acute Appendicitis. S. Warren, Boston.—p. 241.

Phagocytosis of Erythrocytes.—The studies made by Peabody and Broun show that phagocytosis of erythrocytes occurs in the normal bone marrow and to a much greater extent in a variety of pathologic conditions. Among the latter the most notable are certain cases of cirrhosis of the liver and of infectious diseases, such as pneumonia, typhoid and tuberculosis. Phagocytosis of erythrocytes occurs in the bone marrow of patients dying in an acute stage of pernicious anemia in a degree rarely met with in other conditions. In a single case of pernicious anemia in which death occurred in a remission of the disease, phagocytosis of red blood corpuscles was not a striking phenomenon. It is suggested that phagocytosis of erythrocytes may be a factor in the production of hemolytic jaundice and of the anemia in pernicious anemia.

Structure of Hypophysis Cerebri in Acromegaly.—Bailey and Davidoff report four cases and review the literature. They conclude that, at least in those cases of acromegaly in which the gland reaches a size sufficient to demand operation, a constant pathologic change takes place in the pars distalis of the hypophysis cerebri, consisting essentially of an adenomatous formation composed of *a* cells. The normal acinous structure tends to be lost; the cells lie in a loose mass, practically without stroma; the nuclei vary greatly in size, and as many as half a dozen may be present in one cell; the cells contain *a* granules which are finer than the normal *a* granules and which tend to collect in the periphery of the cytoplasm.

Abnormal Cells in Posterior Lobe of Hypophysis.—A peculiar lesion consisting of a group of large abnormal cells in the posterior lobe of the hypophysis is described by Simonds and Brandes. This mass of cells, although actually small, is relatively large when compared with the size of the posterior lobe itself. The nature of the lesion is not clear. It is probably not a neoplasm. Nothing in the clinical histories or physical findings in any of the cases could definitely be associated etiologically with this lesion.

Origin of Adenomatous Goiter.—From a microscopic study of more than 600 adenomatous goiters, Kline is convinced that there is no evidence that this condition depends, as contended by Beck, Wolfler, Ribbert and others, on a development after puberty of embryonic thyroid cell nests. On the other hand, the impression is gained from this study that adenomatous goiter arises, as suggested by Virchow, Hitzig, Michaud and others, from adult thyroid tissue. Furthermore, there is evidence for their belief that it depends essentially on an irregularity in the degree of proliferation of acini in different portions of the gland.

Etiology of Acute Appendicitis.—The bacteriologic and histologic results noted by Warren from a study of sixty-six cases of acute appendicitis show *B. coli* to be the organism most commonly encountered, being found alone in twenty-five appendixes and combined with other organisms in twelve. *Streptococcus hemolyticus* occurred alone in six and combined with the colon bacillus in nine. *Proteus vulgaris* and *B. pyocyaneus* were each found five times. There was a scattering of other organisms. All early lesions found were at the margin of the lumen. The inflammatory reaction does not vary with the organism found in the lesion, although it is, perhaps, more hemorrhagic in those cases from which *Streptococcus hemolyticus* was recovered. In this series of cases the delicate gram-positive bacillus described by Aschoff was not found in the lesion and only rarely in the contents of the lumen. One case of pneumococcus Type I periappendicitis in a 5 year old girl was followed in four days by lobar pneumonia, also due to pneumococcus Type I. The evidence is against a hematogenous origin of acute appendicitis. Acute appendicitis is not a specific disease due to one type of organism, a streptococcus, as is sometimes maintained. Like acute tonsillitis, acute endocarditis and similar infectious lesions, it may be caused by a variety of organisms.

American Journal of Physiology, Baltimore

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Glycogen Content of Heart, Liver and Muscles of Normal and Diabetic Dogs.—N. F. Fisher, Chicago, and R. W. Lackey, Dallas, Texas. —p. 43.
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*Regulation of Renal Activity. XI. Rate of Phosphate Excretion. T. Addis, B. A. Meyers and L. Bayer, San Francisco.—p. 125.
*Ultraviolet Radiations in Conditions of Extreme Calcium and Phosphorus Deficiency. H. S. Mitchell and F. Johnson, Battle Creek, Mich.—p. 143.
Analysis of Certain Mechanical Conditions in Pulmonary Circulation and Their Effects on Lung Ventilation. C. K. Drinker and A. Agassiz, Boston.—p. 151.
Differences in Blood Pressure in Arm and Leg in Normal Subjects. W. Burdick, N. Clarke, R. Garlichs, J. Priestly, and D. Richards, Philadelphia.—p. 169.

Heat Regulation in Thyroidectomized Sheep.—Liddell and Simpson found that the subcutaneous injection of small

amounts of thyroxin (from 0.1 to 0.5 mg. daily) causes a sudden and large increase in the muscular power and neuromuscular activity of thyroidectomized sheep even during extreme lethargy and muscular weakness. Although thyroid extract increases the neuromuscular activity of the cretin sheep, no latent period is observed. Sodium iodid has no effect on the activity of the thyroidectomized sheep.

Relation of Vitamin Deficiency to Muscle Fatigue.—Nelson et al. found that fatigue curves produced by animals on diets lacking vitamin B show progressive diminution in amplitude and endurance as the length of time on the diet increases. These curves also show progressive loss of tonicity and an irregularity of contracture that seem very characteristic. Animals lacking vitamin A produce similar curves which in amplitude and duration are roughly inversely proportional to the interval of time on the diet, but the decrease in tonicity is not so apparent.

Small Intestine in Hunger.—Attention is directed by Ivy and Vloedman to a new gastro-intestinal motor phenomenon —anacatastalsis—which consists of a spreading of a contraction wave or influence from the site of origin of the gastric hunger contraction upward, involving the esophagus, and downward, involving the duodenum. Several accessory phenomena observed in the course of this work are mentioned and discussed. The authors do not conclude that the duodenal motility contributes to the sensation of hunger, but they cite and discuss some evidence suggesting that the nausea and headache of hunger are duodenal in origin.

Phosphate Excretion by Kidney.—By the intravenous injection of a neutral solution of sodium phosphate, all variations in the phosphate concentration of the plasma consonant with freedom from tetany were produced by Addis, Meyers and Bayer while the rate of phosphate excretion was being measured. When these observations are combined with others obtained under the same conditions, except for the omission of the phosphate injection, the data indicate that the rate per kilogram of body weight varies as 0.063 times the square of the plasma phosphate concentration. It is concluded, however, that this equation is applicable only to data obtained under these two diverse conditions. The conclusion is finally reached that the available evidence is in favor of the hypothesis that the rate varies as the plasma concentration.

Ultraviolet Light in Rickets.—Researches made by Mitchell and Johnson show that ultraviolet light not only aids in the healing of rickets caused by deficiency of either phosphorus or calcium, but also causes a retention of calcium when both factors are deficient and a consequent beneficial effect on the skeletal development and the organism as a whole.

Annals of Otology, Rhinology and Laryngology, St. Louis

34: 1-352 (March) 1925

Progress in American Otolaryngology. H. W. Loeb, St. Louis.—p. 1.
Foreign Bodies in Air and Food Passages. G. Tucker and L. H. Clerf, Philadelphia.—p. 5.
Microscopic Study of Excised Tonsil in Relation to Tonsillectomy. S. Israel, Houston, Texas.—p. 79.
Photography of Larynx. L. H. Clerf, Philadelphia.—p. 101.
Treatment of Tuberculous Laryngitis; Use of Chaulmoogra Oil. Claude L. Larue, Boulder, Colo.—p. 122.
Relationship of Teeth to Pathology of Maxillary Sinus. L. E. Brown, Akron, O.—p. 150.
Vestibular Accommodation and Description of Quantitative Caloric Reaction of Brunings and Kobrak. D. MacFarlan, Philadelphia. —p. 160.
Relation of Endocrine Changes to Nasal Sphenopalatine Ganglion Neurosis ("Lower-Half" Headache). E. T. Senseney, St. Louis.—p. 183.
Treatment of Fibromas of Nasopharynx: Thirty-Two Cases. G. B. New and F. A. Figi, Rochester, Minn.—p. 191.
Diagnostic Limitations in Laryngology. W. V. Mullin, Colorado Springs.—p. 197.
Operative Surgery of Mastoid. J. F. Barnhill, Indianapolis.—p. 203.
Frontal Lobe Abscess: Subsequent History of Case Previously Reported. S. Salinger, Chicago.—p. 210.
Jugular Thrombosis Following Tonsillectomy. C. Goodman, New York. —p. 213.
Nasal Fibroma, Surgical Removal, Recurrence Treated by Radiation. B. D. Parish and G. E. Phahler, Philadelphia.—p. 219.
Orbital Complications of Sinusitis. J. A. Patterson, Colorado Springs. —p. 226.
Relation of Dysfunction of Cochlear Nerve to Dysfunction of Ductless Glands. J. Guttman, New York.—p. 231.
Empyema of Antrum of Highmore of Scarlatinal Origin. V. Dabney, Washington, D. C.—p. 257.
Ocular Responses to Vestibular Stimulation. E. M. Josephson, New York.—p. 262.
Radical Mastoid Operation Followed by Paresis of Seventh, Fifth, and Portion of Third Cranial Nerves. Recovery. Advantages of Bárány Modification. H. W. Lyman, St. Louis.—p. 265.
Unsolved Problems of Otolaryngology. H. P. Mosher, Boston.—p. 273.
History of Sinuses. R. H. Skillern, Philadelphia.—p. 286.
Certain Neurootologic Problems. S. D. Ingham and I. H. Jones, Los Angeles.—p. 296.

Annals of Surgery, Philadelphia

81: 573-732 (March) 1925

Surgical Treatment of Cleft Palate. C. N. Dowd, New York.—p. 573.
*Cervical Sympathectomy for Angina Pectoris. J. L. Ransohoff, Cincinnati.—p. 585.
*Surgical Treatment of Angina Pectoris. M. R. Reid and Wm. De.W Andrus, Cincinnati.—p. 591.
Swellings of Submaxillary Region. R. H. Ivy, Philadelphia.—p. 605.
*Relation of Submaxillary Salivary Gland to Infections of Submaxillary Triangle of Neck. R. Colp, New York.—p. 611.
*Gastric Tetany. H. DeBayle, Philadelphia.—p. 622.
Operative Treatment of Duodenal Ulcer; Horsley Operation. J. F. Erdmann and R. F. Carter, New York.—p. 631.
*Acute Intussusception in Children. H. P. Brown, Philadelphia.—p. 637.
*Aseptic End-to-End Intestinal Anastomosis. J. P. Webster, Peking, China.—p. 646.
*Id. J. G. Burns, Rochester, Minn.—p. 670.
*Sarcoma Associated with Ovarian Fibroma. H. D. Caylor, Rochester, Minn.—p. 674.
Cases of Malignant Neoplasms. J. K. Narat, Chicago.—p. 679.
*Results of Intravenous Use of Gentian Violet in Cases of Extreme Septicemia. D. Hinton, Philadelphia.—p. 687.

Cervical Sympathectomy for Angina Pectoris.—Two cases cited by Ransohoff show that attacks of angina pectoris may, in certain cases, be prevented by left cervicosympathectomy. The cardiac disease and the hypertension are not influenced, but the patient's life may be made comfortable.

Surgical Treatment of Angina Pectoris.—Reid and Andrus have collected from the literature sixty-two cases of angina pectoris treated by operation; in fifty cases the sympathetic nervous system was operated on, and in ten the depressor nerve of the parasympathetic system. In possibly two instances, both depressor and sympathetic nerves were removed. Thirteen patients seem to have been unquestionably relieved of pain by the operation. Numerous operative procedures have been employed. The best results have been obtained by doing a cervicothoracic sympathectomy, especially in cases of typical angina pectoris unassociated with recognizable serious cardiac lesions. It is suggested that in operations for angina pectoris, it would be well to remove not only the cervicothoracic sympathetic chain, but also the supposed depressor nerve.

Infections of Submaxillary Triangle.—Since the education of the public on the necessity of better dental hygiene, Colp says that infections of the floor of the mouth have been seen but rarely; but when they occur, they should be treated surgically and energetically, and where the infection has left the confines of the sublingual space and where a lateral incision with division of the mylohyoid would prove inadequate, no hesitancy should be used in removing the submaxillary salivary gland to promote freer drainage. Three cases are reported.

Gastric Tetany.—DeBayle reports a case in which great improvement was obtained immediately following the administration of physiologic sodium chlorid solution by hypodermoclysis, enteroclysis and axillary infusion. This seems to support the findings of McCallum as to the great preventive influence that sodium chlorid has on tetany produced experimentally in dogs with obstruction of the pylorus.

Acute Intussusception in Children.—Thirty-one cases are reviewed by Brown. One case was due to a papilloma of the terminal ileum; one patient had a hemangiosarcoma in the midileum, and one had an unusual congenital deformity of the intestine. All the others originated in the ileocecal region and were included under the general term of ileocecal, no attempt having been made to subdivide the classification

further. Twenty-four cases occurred in the second half year of life, nine before this time, the remaining two being in children more than 2 years of age. The total mortality of this series of cases was 64.5 per cent. The mortality among the children operated on within twenty-four hours of the apparent onset of the condition was 33.3 per cent. In the forty-eighth hour period, nine babies were operated on; three lived. Among the seventy-two hour group, the mortality was 83.3 per cent. After that period, the mortality was 100 per cent.

Aseptic Intestinal Anastomosis.—After using his tubular knife eighty-six times on dogs, and after the safety of the operation had been established, Webster performed an anastomosis on a man in conjunction with the closure of loops of ileum that had been left open to relieve a strangulated hernia. Following the anastomosis there was neither abdominal distention nor any symptom suggesting obstruction. On the second day, the patient passed yellow fecal material by the normal route, and on the fourth and following days he had normal formed, yellowish brown stools. He was eating a full diet by the seventh day after operation without ill results and made an uneventful recovery. Originality is claimed only for the instrument.

Aseptic Intestinal Anastomosis.—The essential points of the operation described by Burns are: making two blind ends, invaginating them, then suturing them over a ball, and removing the ball from the site of operation after the obstructed, invaginated ends have been opened.

Sarcoma of Ovary Associated with Fibroma.—Two cases are reported by Caylor. The clinical symptoms were variable and indefinite. Vague urinary disturbances, constipation and dragging pelvic pains were complained of. One woman had lost a little in weight, and the other was slightly anemic. The fibroma and fibrosarcoma were intimately associated, the latter apparently infiltrating and invading the former. The difference in the structure of the tumors was clearly illustrated by microscopic study.

Intravenous Use of Gentian Violet in Septicemia.—Cases of generalized peritonitis with death from so-called erythisitic shock, in the majority of which a gram-positive organism in pure culture, or as the predominant type in culture of the peritoneal fluid was found, influenced Hinton in the choice of gentian violet, intravenously, as the therapeutic agent to be used in the effort to cut down the high mortality. Treatment of the wounds locally with the dye was purposely omitted. Starting with its use in moribund cases and in severely ill patients, the scope of usefulness was extended to take in those cases less critically ill. The results obtained in the eleven cases that were treated seem to justify its further use as an adjunct to surgery, but in no way as a substitute for it. It is to be considered a part of the preoperative and postoperative treatment of a given case. In these studies proper surgery was done as seemed indicated at the time of operation. In the early cases, a 1 per cent. solution of gentian violet was made by dissolving 0.5 gm. of the powdered dye in 50 c.c. of freshly distilled (same day) sterilized (autoclave) hot water, a clean sterile glass measure of 100 c.c. capacity and a clean sterile glass stirring rod being used. The amount of the solution to be injected was calculated by using a dosage of 5 mg. per kilogram of body weight, approximately 23 c.c. of a 1 per cent. solution per hundred pounds. Within three minutes after the injection in all cases, there was a generalized cyanotic color, most marked in the mucous membranes on the tongue, lips, cheeks, and then in the conjunctiva, face, neck and finger and toe nails. The depth of color varied with the strength of solution and rapidity of injection. The color faded out within from two to four hours. There was no chill, rise of temperature, psychic disturbance or complaint on the part of the patient immediately following injections. The only complications that occurred were four cases of thrombosis, due largely to errors in technic, and transient nausea and diarrhea. The dye did not stain the tears, sweat, urine, feces, saliva, sputum or wound discharges. In the cases in which there were thrombosed veins, the dye stained the entire thickness of the veins and could be seen for days lending a violet hue to the vein. This thrombosis had largely disappeared after three or four weeks.

Boston Medical and Surgical Journal

192: 581-646 (March 26) 1925

Rickets. J. Garland, Boston.—p. 581.
*Acid Milk in Infant Feeding. H. Green, P. R. Withington and L. S. Friedman, Boston.—p. 588.
Potentially Undernourished Child. A. M. Kimberly, Worcester.—p. 594.
Conditions Found in One Thousand Cases of Tonsillectomy and Adenotomy. L. Arkin.—p. 597.
Improved Method of Inhalation Treatment for Infants. B. T. Strongman.—p. 602.

Acid Milk in Infant Feeding.—Green, Withington and Friedman report satisfactory results from the feeding of lemon juice milk, lactic acid milk and hydrochloric acid milk. The cases were referred for failure to gain, malnutrition or vomiting.

192: 647-688 (April 2) 1925

Backache Due to Industry and Disease. J. W. Sever, Boston.—p. 647.
Endocrine Element in Arthritis. H. K. Thompson.—p. 658.
Treatment of Certain Pulmonary Conditions. W. Whittemore, Boston.—p. 664.
Relaxed Articulation of First Metacarpus and Trapezium. L. A. O. Goddu, Boston.—p. 666.
Abdominal Crisis of Migraine. J. A. Buchanan, Brooklyn, N. Y.—p. 667.

192: 689-736 (April 9) 1925

Compulsory Vaccination. C. C. Pierce, Chicago.—p. 689.
Early Diagnosis of Cancer of Large Intestine. J. Homans.—p. 695.
Diverticulum of Duodenum. P. F. Butler and M. Ritvo, Boston.—p. 705.
Intracarotid Route in Treatment of General Paresis. H. L. Hirsch, A. Myerson and R. D. Halloran.—p. 713.

Canadian Medical Association Journal, Montreal

15: 243-346 (March) 1925

Health Surveys, Health Nurses and Medical Profession. J. A. Amyot, Ottawa.—p. 254.
License Inspectors. T. G. Hamilton, Winnipeg.—p. 261.
Public Health Work in Saskatchewan. M. M. Seymour.—p. 271.
Notification of Communicable Disease. A. C. Jost, Halifax.—p. 278.
Greatest Public Health Need of Canada. J. W. S. McCullough.—p. 234.
Health Insurance. J. H. MacDermot, Vancouver.—p. 287.
Maternal Mortality in Canada. H. MacMurchy, Ottawa.—p. 293.
Classification of Medical Schools. J. C. Connell, Kingston.—p. 297.
Purity and Potency of Drugs. V. E. Henderson, Toronto.—p. 300.
Medical Education. J. J. R. Macleod, Toronto.—p. 304.
Medical Education. C. F. Martin, Montreal.—p. 308.
Postgraduate Medical Education in Canada. G. S. Young, Toronto.—p. 312.

Endocrinology, Los Angeles

9:1-108 (Jan.-Feb.) 1925

Organotherapy. H. Lisser, San Francisco.—p. 1.
Diagnosis and Treatment of Hypo-ovarianism. K. G. Hancher and J. Rogers, New York.—p. 21.
Clinical Significance of Congenital Absence of Upper Lateral Incisor Teeth. H. Wheelon, Seattle, Washington.—p. 35.
Case of Pluriglandular Dyscrasia. F. S. Modern and G. F. Reed, Morristown, N. J.—p. 61.
Enlarged Thymus in Infant; Tetany After Roentgen-Ray Treatment. M. J. Konikow, Boston.—p. 70.

Georgia Medical Association Journal, Atlanta

14: 89-132 (March) 1925

Treatment of Bone and Joint Tuberculosis. L. Thornton, Atlanta.—p. 89.
Surgery of Thyroid Under Local Anesthesia. T. C. Davison, Atlanta.—p. 91.
Adhesive Bands of Ascending Colon, with Obstructive Symptoms. L. W. Grove, Atlanta.—p. 95.
Air Cystograms to Demonstrate Prostatic Enlargements Which Protrude Into Bladder. E. G. Ballenger, O. F. Elder and W. F. Lake, Atlanta.—p. 99.
Eclampsia. W. L. Mathews, Winder.—p. 105.
Plea for Persistency in Treatment of Gonorrhea. W. P. Jordan, Columbus, Ga.—p. 110.
Treatment of Pneumonia. S. R. Roberts, Atlanta.—p. 113.

Journal of Bacteriology, Baltimore

10: 105-195 (March) 1925

Indol and Skatol Determination in Bacterial Cultures. C. R. Fellers and R. W. Clough, Washington, D. C.—p. 105.
Physiology of Thiobacillus Thio-oxidans, an Auto-Trophic Bacterium Oxidizing Sulphur Under Acid Conditions. R. L. Starkey, New Bruswick, N. J.—p. 135.
Carbon and Nitrogen Nutrition of Thiobacillus Thio-oxidans. R. L. Starkey, New Brunswick, N. J.—p. 165.

Journal of Comparative Psychology, Baltimore

5: 1-108 (Feb.) 1925

Factors Influencing Static Equilibrium. F. S. Fearing, Stanford University, Calif.—p. 1.

Comparative Aspect of McDougall's Outline of Psychology. H. C. Bingham, Delaware, Ohio.—p. 25.
Tests of Musical Feeling and Musical Understanding. M. Schoen, Pittsburgh.—p. 31.
Sensori-Motor Responses in Infants. M. Sherman and T. C. Sherman, Evanston, Ill.—p. 53.
Phototactic Reactions of Alligator Mississippiensis. A. M. Reese, Morgantown, W. Va.—p. 69.
Accuracy of Pecking Response in Chicks. D. Moseley, Kansas City, Mo.—p. 75.
Chimpanzee Vision by Ladyginkohts. R. M. Yerkes and A. Petrunkevitch, New Haven, Conn.—p. 99.

Journal of Infectious Diseases, Chicago

36: 109-244 (Feb.) 1925

Microbic Respiration. I. Compensation Manometer and Other Means for Study of Microbic Respiration. F. G. Novy and M. H. Soule, Ann Arbor, Mich.—p. 109.
Id. II. Respiration of Tubercle Bacillus. F. G. Novy and M. H. Soule, Ann Arbor, Mich.—p. 168.
Clasmatocytes and Passive Immunity to Streptococcus Infection. VI. Streptococcus Infection and Immunity. F. P. Gay and A. R. Clark, Stanford University, Calif.—p. 233.

36: 245-342 (March) 1925

Microbic Respiration. III. Respiration of Trypanosoma Lewisi and Leishmania Tropica. M. H. Soule, Ann Arbor, Mich.—p. 245.
Differentiation of Paratyphoid-Enteritidis Group. E. O. Jordan, Chicago.—p. 309.
Electrical Conductance of Inhomogeneous Systems with Applications to Suspensions of Blood Cells. F. H. MacDougall and R. G. Green, Minneapolis.—p. 330.
"Hormone" Mediums. S. F. Bailey, Pittsburgh.—p. 340.

Kansas Medical Society Journal, Topeka

25: 65-96 (March) 1925

Tobacco: Its Use and Abuse. F. L. Abbey, Newton.—p. 65.
Radium Treatment of Cancer of Face. M. Truehart, Sterling.—p. 70.
Ectopic Pregnancy. M. J. Owens, Kansas City, Mo.—p. 73.
Medical Fingerprints. R. G. Breuer, Norton.—p. 77.

Maine Medical Association Journal, Portland

16: 39-58 (March) 1925

Diagnosis of Diseases of Biliary Passages. J. Homans, Boston.—p. 39.

New Orleans Medical and Surgical Journal

77: 349-408 (March) 1925

*Etiology of Rat Bite Fever. J. A. Lanford and E. H. Lawson, New Orleans.—p. 349.
Whole Time County Health Service. C. C. Applewhite, Jackson, Miss.—p. 352.
Cesarean Section. L. Crawford, Patterson, La.—p. 356.
Health and Sanitation in Harrison County. D. J. Williams, Gulfport, Miss.—p. 360.
Treatment of Placenta Praevia. C. J. Miller, New Orleans.—p. 370.
Modern Treatment of Insane. C. D. Millers, Jackson, Miss.—p. 374.
Appendectomy Under Local Anesthesia. R. B. Wallace, Alexandria, La.—p. 377.
Insulin in Treatment of Nondiabetic Acidosis. E. L. Irwin, New Orleans.—p. 379.
Syringomyelia. J. D. Young, Shreveport, La.—p. 383.

Etiology of Rat Bite Fever.—Lanford and Lawson recovered a spirochetal organism, which completely corresponds to *Spirocheta morsus-muris* by injecting white mice with material obtained from the swollen lymph node of a patient that had been bitten by a rat forty-two days previously. The organism was actively motile; from 1.5 to 5 microns long; from 0.2 to 0.3 micron in thickness, with from two to six relatively deep curves; it has two or more flagellae, no undulating membrane and divided transversely. It is not difficult to stain by the ordinary dyes, being particularly well defined by the various Romanowsky methods.

Northwest Medicine, Seattle

24: 105-158 (March) 1925

Cancer: Adaptive Retreat of Cell from Physical Adversity. A. E. Rockey, Portland, Ore.—p. 105.
Colonic Stasis. R. D. Forbes, Seattle.—p. 110.
Chronic Duodenal Obstruction. H. J. Whitacre, Tacoma.—p. 113.
Acute Infections of Costal Cartilages. C. M. Doland, Spokane.—p. 115.
Treatment of Diffuse Peritonitis. H. P. Marshall, Spokane.—p. 116.
*Localized Periosteal Sarcoma of Tibia Treated by Excision and Cautery. F. F. Attix, Lewistown, Mont.—p. 118.
Case of Osteochondroma of Female Breast. F. E. Fowler, New York.—p. 122.
Cholecystography and Diagnosis of Chronic Gallbladder Disease. K. Winslow, Seattle.—p. 124.
Relation of Dental Infections to Health and Disease. W. A. Price, Cleveland.—p. 128.
Effect of Anesthesia on Kidney. W. J. Stater and K. H. Prindle, Portland, Ore.—p. 132.
Some Misinterpretations of Roentgenograms and Fluoroscopic Screens. C. E. Koenig, Seattle.—p. 136.
Achievements of Modern Medicine. R. L. Nourse, Boise, Idaho.—p. 139.
Migraine and Its Treatment. H. J. Friedman, Seattle.—p. 142.

Localized Periosteal Sarcoma of Tibia.—Attix reports a case which is the justification for stating that in selected cases of localized osteogenic sarcoma of the extremity the surgeon is justified in treating the case with the method of wide excision and cautery of the involved or suspected area, subsequently using radium, deep, heavy roentgen-ray therapy and other methods that may be helpful in the attempt to prevent local recurrence and metastasis, especially to the lungs, early in the onset of the disease.

Philippine Journal of Science, Manila

26: 131-309 (Feb.) 1925

Pachyrrhynchid Group of Brachyderinae, Curculionidae: III. Genera Apocyrtidius Heller and Metapocyrtus Heller. W. Schultze, Manila.—p. 131.

Southern Medical Journal, Birmingham, Ala.

18: 157-228 (March) 1925

*Relation of Sprue and Pernicious Anemia to Each Other and to Monilia Psilosis. E. J. Wood, Wilmington, N. C.—p. 157.
Study of Pylorus and First Portion of Duodenum Following Pyloroplasty. F. M. Hodges, Richmond, Va.—p. 162.
Value of Roentgen Ray from Viewpoint of Pulmonary Clinician. P. H. Ringer, Asheville, N. C.—p. 165.
Roentgen-Ray Studies of Diaphragm. C. L. Martin, Dallas, Texas.—p. 170.
*Lymphoid Hyperplasia in Thyroid. G. T. Caldwell, Dallas, Texas.—p. 177.
*Carcinoma of Breast at Massachusetts General Hospital. R. B. Greenough, Boston.—p. 187.
Acute Nontuberculous Iliopsoas Abscess. L. Long, Oklahoma City.—p. 198.
Surgical Treatment of Bladder Tumors. O. Grant, Louisville.—p. 202.
*Relation of Syphilis to Trauma. H. N. Page, Augusta, Ga.—p. 206.
Intraperitoneal Rupture of Urinary Bladder. F. L. Hupp, Wheeling, W. Va.—p. 209.
Prevention and Treatment of Colds. C. M. Miller, Richmond, Va.—p. 214.
*Sphenoid and Posterior Ethmoid Paranasal Cells as Etiologic Factor in So-Called Brachial Neuritis. J. D. Heitger, Louisville.—p. 218.

Relation of Sprue and Pernicious Anemia.—A large series of controlled animal feedings and inoculations made by Wood suggest that the toxins produced by *Monilia psilosis* are capable of producing definite hemolytic changes. It is not difficult to imagine that the processes in the various portions of the intestinal tract caused by *Monilia psilosis* may account not only for the intestinal symptoms but also for the blood changes. The part played by *Monilia psilosis* in the production of disease requires much further study and its relation to so-called sprue must be more definitely determined.

Lymphoid Hyperplasia in Thyroid.—In the routine examination of portions of thyroid gland removed surgically, it became evident to Caldwell that one of the common pathologic findings is a hyperplasia of the lymphoid tissue of the gland. This hyperplasia is not given much consideration in the usual discussions of thyroid pathology, despite the fact that it is frequently the single outstanding change that is observed when the gland is examined microscopically. In these cases, it deserves recognition as one of the anatomic forms of goiter.

Results of Treatment of Carcinoma of Breast.—The results of the treatment of cancer of the breast at the Massachusetts General Hospital, Greenough says, are not so favorable as could be desired, but they appear to show that roentgen-ray treatment as it was then given at that hospital, in prophylaxis against recurrence after radical operation, was of relatively little value, and that the earlier the disease is discovered and the more extensive the operation for radical cure, the better the results. A certain small proportion of cases of breast cancer are probably from the beginning of so malignant a type that present methods of treatment are quite inadequate to cope with them, but the majority of cases are more favorable and can be cured if only they can be dis-

covered and given radical surgical treatment in the early and favorable stages of the disease.

Relation of Syphilis to Trauma.—Page reports three cases, one late that had gone to gumma formation, one in the intermediate stage (osteitis) and one early (periostitis) as examples of cases in which syphilis was the predominating factor in the continuation of the disability.

Cause of Brachial Neuritis.—Heitger is convinced that hyperplastic postethmosphenoiditis is more frequent than is suspected the etiologic factor in so-called "brachial neuritis."

West Virginia Medical Journal, Huntington

20: 113-168 (March) 1925

Cancer of Breast, Oral Cavity and Bone. J. Bloodgood, Baltimore.—p. 113.
Malignant Tumors; Treatment with Roentgen Rays. A. R. MacKenzie, Huntington.—p. 117.
Accessory Sinuses. R. A. Tomassene, Wheeling.—p. 121.
Chronic Tonsillitis. J. K. Guthrie, New Hampton, Iowa.—p. 126.
Surgical Treatment of Gastric and Duodenal Ulcers. W. S. Fulton, Wheeling.—p. 134.
Irritable Bladder. C. J. Reynolds, Bluefield.—p. 137.
Tuberculosis. G. D. Lind.—p. 141.

Wisconsin Medical Journal, Milwaukee

23: 539-588 (March) 1925

Surgery of Jaundice. J. B. Deaver, Philadelphia.—p. 539.
Advances in Surgery Through Physicochemic Studies of Blood. W. J. Mayo, Rochester, Minn.—p. 545.
Nonmalignant Obstruction of Pylorus in Aged. J. A. Witherspoon, Nashville, Tenn.—p. 549.
Postoperative Complications Following Appendectomy. V. F. Marshall and G. W. Carlson, Appleton, Wis.—p. 553.
Use of Convalescent Serum in Prophylaxis of Measles. G. H. Weaver and T. T. Crooks, Chicago.—p. 555.

FOREIGN

An asterisk (*) before a title indicates that the article is abstracted below. Single case reports and trials of new drugs are usually omitted.

British Journal of Tuberculosis, London

19: 65-112 (April) 1925

Heme Infection in Tuberculosis and How to Neutralize Its Dangers. S. L. Cummins.—p. 65.
Resemblances Between Leprosy and Tuberculosis. L. Rogers.—p. 69.
Surgery in Treatment of Pulmonary Tuberculosis. W. H. C. Romanis.—p. 74.
Method of Obtaining Roentgenograms in Artificial Pneumothorax Work. F. R. G. Heaf and R. A. C. Macnair.—p. 80.
Sunshine and Surgical Tuberculosis. J. B. Barnett.—p. 82.

British Medical Journal, London

1: 685-722 (April 11) 1925

Occupational and Other Causes of Pulmonary Fibrosis. T. Oliver.—p. 685.
Prolonged Meningococcemia with Terminal Meningitis. G. L. Gulland and W. R. Logan.—p. 687.
*Chemotherapy of Recent Experimental Wound Infections: Acriflavine. C. H. Browning and R. Gulbransen.—p. 688.
Decline of Litholapaxy. A. Hooton.—p. 690.
Method of Determining Patency of Fallopian Tubes by Roentgen Rays. E. Williams and R. Reynolds.—p. 691.
*Heart in Chronic Toxemia. H. C. Nixon.—p. 692.
*Severe Dermatitis Following Ultraviolet Light. H. MacCormac and H. M. McCrea.—p. 693.
Asiatic Bilharzia Disease. J. P. Cullen.—p. 694.
Myelogenous Leukemia in Negro: Failure of Tryparsamid. C. C. Chesterman.—p. 694.
Rupture of Sclerosed Artery. D. L. Charters.—p. 694.

Acriflavine in Treatment of Wounds.—The results of treating recent experimental wounds opening into the subcutaneous tissue which have been infected with highly virulent diphtheria bacilli prove the efficiency of antiseptic therapy. Under the conditions investigated by Browning and Gulbransen, brief treatment with a suitable antiseptic (neutral acriflavine in concentrations of from 1:100 to 1:1,000) has caused survival of practically 100 per cent. of the infected animals. On the other hand, salt solution (either 0.85 or 5 per cent. sodium chlorid) similarly applied did not prevent in any instance the acute illness and fatal termination. When acriflavine and phenol are compared, it is found that the ratio of their therapeutic effectiveness exceeds 50:1. In less virulent infections the therapeutic action of phenol is evident. But bipp showed practically no action even in the latter; it would appear that the therapeutic effect of this mixture, so frequently commented on by clinical observers, must depend on some property other than an antiseptic one.

Heart in Chronic Toxemia.—There appears to be a definite connection between left-sided preponderance and a hypertonic state of the arterial wall. When by treatment the toxins are removed, and can no longer act as irritants to the wall of the artery, left-sided preponderance disappears. Coincidently T wave negatively in Lead III depends on the cardiac atony, and it tends to assume its normal deflection as the toxemia becomes less pronounced, the heart regaining its power of sustained partial contraction, in which stretching is resisted. It would seem that the generally accepted view that inversion of T in Lead III, when it appears as a normal event, is incorrect.

Ultraviolet Light Dermatitis.—One hour and ten minutes' exposure to the ultraviolet light caused a severe burning of the skin similar to that seen after ordinary sunburn, the front of the body and legs becoming at first bright red and swollen, subsequently desquamating. After seven days, the body, both back and front, was markedly pigmented, the right leg was swollen with in places raw areas exposing the papillae, and a similar but less pronounced condition was observed over the left leg. Later a general erythema of the trunk and extremities was noted, with urticaria, and the patient was very much disturbed by the severity of the itching, which seriously interfered with rest and sleep. Three days later, although in the interval the edema had diminished considerably, there was an extension of the eruption to the face, which became puffy and wept in places. On the seventeenth day, there was restlessness, disturbance, and little and fitful sleep; the cardiac rhythm became disordered, extrasystoles developing. The patient continued to be gravely ill for four days, then rallied and appeared to be out of immediate danger.

Calcutta Medical Journal

20: 315-361 (Feb.) 1925

Is Kala-Azar Contagious? J. Maitra.—p. 315.
Pelvimetry. S. K. Gupta.—p. 318.
Roentgenotherapy in Dermatologic Practice. A. Gupta.—p. 320.
Vitamins. A. Ray.—p. 341.

China Medical Journal, Shanghai

39: 185-286 (March) 1925

Relationships in Medicine Between China and Western World. E. H. Hume.—p. 185.
Exchanges of Medicaments and Medical Terminology. I. Foreign Plants Introduced Into China.—p. 191.
Choice of Operation in Extraction of Cataract. G. M. Harston.—p. 199.
Inguinal Hernia: One Hundred Operations on Korean Patients. A. I. Ludlow.—p. 204.
Temperature and Pulse Rates of Patients in Peking and Boston. W. G. Lennox.—p. 218.
Congenital Absence of Pectoralis Major Muscle. G. A. M. Hall.—p. 224.
Paraffin Bath and Warming Table. J. T. Illick.—p. 225.

Glasgow Medical Journal

21: 201-271 (April) 1925

Zoology and Medical Curriculum. J. G. Kerr.—p. 201.
Ocular Disturbances in Functional Inefficiency of Kidney. A. M. Ramsay.—p. 208.
Growth of Glasgow from 1841 to 1921. J. Brownlee.—p. 228.

Indian Medical Research Memoirs, Calcutta

1: 1-95 (Oct.) 1925

Ankylostomiasis Inquiry in Madras. K. S. Mhaskar.—p. 1.

Journal of Physiology, London

59: 395-478 (March 31) 1925

Dissociation of Oxyhemoglobin in Tissues. J. A. Campbell.—p. 395.
*Formation of Sulphemoglobin. A. A. Hijmans van den Bergh and H. Wieringa.—p. 407.
*Influence of Chemical Factors on Coronary Circulation. R. Hilton and F. Eichholtz.—p. 413.
*Measurement of Blood Coagulation Time. O. S. Gibbs.—p. 426.
*Pancreatic Secretion. G. V. Anrep, J. L. Lush and M. G. Palmer.—p. 434.
Part Played by Ala Cinerea in Vasomotor Reflexes. J. M. D. Scott.—p. 443.

*Action of Oxalates and of Citrates on Circulating Blood. J. W. Pickering and J. A. Hewitt.—p. 455.
Excitability of Anemic Medulla Oblongata. F. Roberts.—p. 460.
*Influence of Vagus on Islets of Langerhans. I. Vagus Hypoglycemia. G. A. Clark.—p. 466.
Nutrition with Diets Rich in Protein. V. B. Reader and J. C. Drummond.—p. 472.

Formation of Sulphemoglobin.—It is asserted by van den Bergh and Wieringa that hydrogen sulphid combines with hemoglobin or reduced hemoglobin only in the presence of oxygen. It has no effect on reduced hemoglobin if air be completely excluded.

Influence of Chemical Factors on Coronary Circulation.—Hilton and Eichholtz assert that the coronary vessels are extremely susceptible to change in the oxygen tension of the blood flowing through them, their state of contraction being almost proportional to the oxygen tension of the blood. A fall of the oxygen saturation of the hemoglobin below 20 per cent. causes maximal dilatation of these vessels. There is no evidence that any other nonvolatile metabolites are concerned in the "regulation" of the coronary flow. The increased flow in asphyxia, previously ascribed to the action of metabolites, is sufficiently accounted for by the anoxemia.

Time of Blood Coagulation.—Observations were made by Gibbs on the coagulation time of blood by various methods. They show that considerable variation of time occurs with the different methods with the area of contact with foreign material, with the nature of the material, and with the temperature. When blood is obtained from a blood vessel of an animal either by means of a cannula, or by pricking an ear vein, the coagulation time is inconstant and in the course of an hour or two decreases. These methods give no certain indication of the degree to which hemorrhage is prevented by hemostatic remedies in the body when small blood vessels are severed; here the effect of the tissue products on clotting is eliminated to a varying extent by the methods employed.

Pancreatic Secretion.—In protracted secretion of pancreatic juice maintained at a constant rate by continuous injection of secretion, all three enzymes show a parallel diminution in their concentration. Contrary to the view of Terroine and Lalou, the lipase does not show a more rapid fall in concentration than the other two enzymes. This diminution in concentration of enzymes is not a true exhaustion of the gland. The explanation is advanced that the changes in the concentration of the enzymes depend on the general condition of the animal and the blood supply to the gland.

Action of Oxalates and Citrates on Circulating Blood.—Pickering and Hewitt state that blood oxalated and recalcified in vivo behaves similarly to blood so treated in vitro. Thrombosis arising from the intravascular injection of calcium chlorid into the circulating oxalated blood of pithed cats is not due to the formation of crystals of calcium oxalate in the plasma. Intravascular injection of small amounts of sodium citrate into the cat produces hypercoagulability; large amounts produce temporary inhibition of clotting and blood shed during which the inhibitory phase remains fluid for several hours. Recalcification of citrated blood in vivo does not cause thrombosis in the cat, but may induce intravascular clotting in the rabbit. Deductions from the recalcification of plasmas oxalated or citrated in vitro have only a limited meaning and cannot be applied to the problems either of circulating blood or of thrombosis.

Vagus Hypoglycemia.—The results described by Clark suggest that stimulation of the vagus causes a secretion of insulin.

Journal of Tropical Medicine and Hygiene, London

28: 137-152 (April 1) 1925

Three Cases of Castellani's Endemic Funiculitis in Kenya Colony. N. P. Jewell.—p. 137.
*Lightning Stroke and Electric Storms in Tropics. H. A. Spencer.—p. 138.

Treatment of Lightning Stroke.—Spencer emphasizes the fact that, in most cases of lightning stroke, it is possible to resuscitate an insensible person who has been struck, by ordinary artificial respiration and brisk rubbing of the body and limbs to set the circulation going again; for the heart, like other muscles, is instantly contracted very firmly by the electrification, and may so remain for a considerable time until forcibly distended by the blood again being pumped into it from the lungs and body. A condition of stasis of the circulation exits at this time, and, during the period of insensibility, there is much suffusion of the face, pointing to feebleness of the circulation from an exhaustion which is probably both nervous and muscular. Many times those struck and apparently quite dead have been thus revived, and excellent work achieved by volunteers in numberous relays. It is recognized treatment also to give a few grains of calomel during the insensibility stage; it acts satisfactorily, probably by stimulating rather violent peristalsis, and in some such way assisting in the recovery of the circulation in the abdomen, for the suffusion of the face diminishes soon after the calomel has acted well.

Lancet, London

1: 749-802 (April 11) 1925

Wounds and Other Injuries in Their Medicolegal Aspect. III. B. Spilsbury.—p. 749.
*Gastric Function in Health and Disease. III. J. A. Ryle.—p. 754.
Iodin as An Aid to Surgery in Treatment of Exophthalmic Goiter. A. S. Jackson.—p. 759.
*Toxic Conditions Following Ether Anesthesia. R. J. Minnitt.—p. 761.
*Difficulties in Diagnosis of Acute Phase of Epidemic Encephalitis in Children. J. L. Halliday.—p. 763.

Gastric Function in Health and Disease.—The conceptions which Ryle defines in his two lectures are: First, there are two main types of dyspeptic reaction, the immediate and the delayed (or those associated with a recently filled or an emptying stomach). Secondly, the causal or provocative factors are of two main types, the pressor and the depressor. Thirdly, the dyspeptic reactions are determined in part by these causal factors, but in part also by the physiologic type or gastric habitus of the individual, and the gastric habitus again (when variant from the normal) is of two main types, the hypersthenic and hyposthenic. Immediate pain or discomfort is the common response with the hyposthenic habitus and in dyspepsias resulting from depressor influences. It is thus encountered more frequently in the female sex and in association with general debilitating diseases. It may also be encountered in the irritative dyspepsias, if these develop in a patient with the hyposthenic habitus or with general debility. Under such circumstances, the syndrome of gastric ulcer may be reproduced. Delayed pain or discomfort is the common response with the hypersthenic habitus or in dyspepsias resulting from pressor influences. It is thus encountered more frequently in the male sex and in association with central or reflex irritative causes. If any of these causes are present in association with the hypersthenic habitus, the symptoms of duodenal ulcer may be reproduced. The more circumscribed the focus of irritation and the more nearly it is situated to the stomach, the more sharply defined do the symptoms become, but even in a "worry" or "fatigue" dyspepsia, the characters of the ulcer syndrome can sometimes be detected. If an irritative focus is developed in association with the normal habitus, which is present in from 70 to 80 per cent. of the population, the liability to dyspeptic symptoms is less than in the extreme physiologic types and local symptoms are more in evidence.

Toxic Conditions Following Ether Anesthesia.—Pemberton and Cunningham have shown that ether anesthesia produces a hyperglycemia, not only in the diabetic but also in the normal person, and they have stated that in the diabetic case the risks run were due to anesthesia and shock, both of which produced the hyperglycemia. Minnitt cites five cases to show: that to a lesser extent the same is true in the nondiabetic person; that there is a definite relationship between this hyperglycemia, associated with ether anesthesia, and the toxic symptoms that follow; also that the treatment prescribed for their amelioration should be on the lines which have been found so successful in the case of the patient with diabetes.

Diagnosis of Acute Encephalitis in Children.—In children the diseases most liable to be confused with early encephalitis are gastro-enteritis, tuberculous meningitis and pneumonia. Halliday emphasizes the fact that examination of the cerebro-

spinal fluid will always exclude meningitis, and in certain instances will establish a diagnosis of encephalitis. In gastro-enteritis the gastro-intestinal symptoms are often overlooked on account of others suggesting a disease of the nervous system, such as headache, delirium, drowsiness, sighing respirations, and pseudoptosis. Pneumonia in its early stages, before the development of physical signs in the chest, may be mistaken for encephalitis when it is ushered in by convulsions, twitchings, delirium, meningism, drowsiness, vomiting and pain in the side. On the other hand, pain in the side, a cough, and rapid respirations may be the first symptoms of encephalitis.

Bulletin de l'Académie Royale de Médecine, Brussels

4: 687-755 (Dec. 24) 1924

Serous Cysts in Omentum. Rouffart.—p. 698.
Macallum's Test Unit for Arsphenamins. De Myttenaere et al.—p. 704.
*Faradization of Sympathetic in Dogs. H. Fredericq.—p. 735.

Bathmotropic Action of Sympathetic on Ventricular Extrasystoles.—Fredericq recorded, with prolonged faradization of the accelerator nerves in the dog heart, not only functional changes in the nerve fibers, but also in the excitability of the myocardium. An impairment of the excitability was revealed by lengthening of the chronaxia in the extrasystoles of the ventricles. Faradization of the accelerators seemed also to enhance the rheobasis of the extrasystoles.

Bulletins de la Société Médicale des Hôpitaux, Paris

49: 431-477 (March 20) 1925

*Primary Insufficiency of Left Ventricle. E. May.—p. 432.
*Recklinghausen's Disease of Bone. A. Léri and A. Linossier.—p. 436.
Tuberculous Neuritis. Lévy-Valensi et al.—p. 443.
Treatment of Syphilis by the Mouth. Flandin and Simon.—p. 444.
Familial Tendency to Anemia. P. Emile-Weil and M. Lamy.—p. 473.

Case of Primary Insufficiency of Left Ventricle.—The condition observed by May in a man, aged 34, had developed under the clinical aspect of recurring pleurisy. Roentgenograms revealed hypertrophy predominating in the left ventricle, with slight dilatation of the right heart, but no valvular nor aortic lesions nor arterial hypertension. Hence the affection presents the type of Laubry's myocardia.

Generalized Fibrocystic Disease of Bone.—Cystic degeneration of the root of the nails was one uncommon feature in Léri and Linossier's patient. Almost the entire skeleton was involved in the multiple cystic degeneration in the man, aged 30. A positive Wassermann reaction three years before suggests the syphilitic nature of the disease. At that time the bone disease was taken for a peculiar type of rickets. Three cases of this affection have been examined in about one year.

Comptes Rendus de la Société de Biologie, Paris

92: 765-844 (March 20) 1925. Partial Index

*Epinephrin Secretion. E. Gley and A. Quinquaud.—p. 771.
*Chronaxia and Blood Balance in Tetany. Bourguignon et al.—p. 781.
Origin and Development of Tooth Enamel. E. Retterer.—p. 784.
*Test for Cholesterol in Tissues. M. Romieu.—p. 787.
*Exudate from Tuberculous Guinea-Pigs. J. Paraf.—p. 792.
Culture of Tubercle Bacilli in Pleural Effusion. L. Karwacki.—p. 801.
*Microtest for Gonorrhea. S. Sierakowski.—p. 803.
*Sensibility of Small Intestine. Pi Suñer and Puche.—p. 807.
*Antigen-Agglutination Power. Domingo and Raurich.—p. 811.
*Reaction to Drugs after Thyroidectomy. R. R. Busso.—p. 820.
*Recuperation after Insulin. J. T. Lewis and M. Magenta.—p. 821.
*Insulin in Hypophysectomized Dogs. Houssay and Magenta.—p. 822.
Phosphorus and Calcium in Healing of Fractures. Satanowski.—p. 826.
*Microbic Hydrolysates. Imaz and Laclau.—p. 837.

Changes in Epinephrin Content from Excitation of Splanchnic Nerve.—In thirty-five experiments made by Gley and Quinquaud on eighteen dogs, the amount of epinephrin in the suprarenal veins was generally, but not always, reduced after excitation of the splanchnic nerve for sixty seconds, and sometimes it varied during the test.

Chronaxia and Acid-Base Balance in Tetany from Hyperpnea.—Bourguignon, Turpin and Guillaumin noted that tetany, from voluntary and prolonged deep breathing, is accompanied by a lengthening of the chronaxia from the motor point of the muscle. The phenomenon parallels the clinical signs and the changes in the acid-base balance, consisting in hyperalkalinity with reduction of the ionized calcium in the blood.

Method for Detection of Cholesterol in Tissues.—Using successively sulphuric acid and then acetic anhydrid, Romieu obtained vividly stained preparations, the color persisting for several days.

Immunizing Action of Peritoneal Effusion from Tuberculous Guinea-Pigs.—Paraf found repeatedly in his four years of research that the inoculation of other guinea-pigs with the exudate from peritonitis of tuberculous guinea-pigs induced allergy and immunity against tubercle bacilli, identical to those from inoculation of living bacilli. This occurred although the exudate was free from tubercle bacilli.

Microtest for Gonorrhea.—Sierakowski affirms that his differential stain culture method, previously described, proved reliable in the numerous cases of gonorrhea examined.

Effect of Intestinal Sensibility on Circulation and Respiration.—Pi Suñer and Puche's conclusion is that the sensibility in the small intestine is weaker, and consequently its influence on the circulation and respiration reflexes is less important than that of the stomach. The splanchnic are the sensory nerves of the small intestine, while the vagi control only the conduction of sensations.

Relations Between Antigen Power and Agglutination.—Study of six species of pneumococci showed the antigen power correlated with the property of agglutination. Cocci which induce only weak production of antibodies do not agglutinate readily.

Reaction to Toxic Substances in Thyroidectomized Animals.—The reaction to toxic doses of epinephrin and of phenol did not appear to be changed, while the reaction to morphin was exaggerated in 124 thyroidectomized rats. Normal rats were more susceptible to potassium cyanid than the thyroidectomized, but the reverse was noted in twenty-five thyroidectomized rabbits. Busso states that the higher resistance to the poison evidently cannot be ascribed to a diminished metabolism, since the latter was also reduced in the rabbits.

Factors in Recuperation of Glycemia Following Action of Insulin.—Severing the splanchnic nerves enhanced the action of insulin in dogs. The same, although in lesser degree, occurred after experimental suppression of epinephrin secretion. Section of the hepatic nerves slightly increased, while severing the vagi reduced the action of insulin in the animals. Lewis and Magenta think that the factors involved in hyperglycemia may share also in recuperation of the glycemia after the transitory action of insulin.

Action of Insulin on Dogs After Removal of the Pituitary.—The action of insulin was stronger in five hypophysectomized dogs than in the normal.

Hydrolysates in Treatment of Staphylococcus Infection.—Imaz and Laclau treated successfully twenty-five cases of staphylococcus infection with abiuretic hydrolysates of staphylococci, typhoid bacilli or *Saccharomyces cerevisiae*. A subcutaneous dose of 10 c.c. of the product proved to be harmless in man. Furuncles and carbuncles healed in four to eight days; sycosis in ten to fifteen days. One patient with a gonorrheal arthritis, persisting for a month and refractory to all treatment, recovered after four daily injections of casein hydrolysate. The beneficial effect may be due to stimulation of the tissue metabolism, and increased phagocytosis.

Journal d'Urologie Médicale et Chirurgicale, Paris

19: 97-192 (Feb.) 1925

Uronephrosis from Calculi. S. Rolando.—p. 97.
*Case of Leukemic Priapism. P. Moure and R. Leibovici.—p. 101.
*Epidural Anesthesia in Urologic Surgery. F. Bilger.—p. 111.
Case of Tuberculosis of Urethra. A. Boeckel and C. Oberling.—p. 127.
Case of Renal Tuberculosis. G. Bernadet.—p. 132.
Intra-Urethral Papillomas. G. Bernadet.—p. 134.
Uropyonephrosis and Lithiasis of Ectopic Kidney. G. Jean.—p. 136.
Diagnosis and Treatment of Perinephritic Phlegmon. Marion.—p. 140.
Chart for Ambard's Formula. Marchand and Merle.—p. 149.

Case of Leukemic Priapism.—Moure and Leibovici describe a case of priapism in myeloid leukemia, probably from thrombosis in the corpora cavernosa. Spontaneous priapism should suggest leukemia and examination of the blood. In

many instances, as here, the priapism first reveals the leukemia. Sedatives may be of service. In an early stage of the leukemia, immediate incision and drainage of the corpora cavernosa is advised. In their case, after failure of internal treatment for twenty days, an incision was made at the base of the right cavernous body, where a painful hematoma had developed. Spontaneous cure may entail sclerosis. It rarely gives better results than operative treatment; hence the latter should be applied early.

Epidural Anesthesia in Urologic Surgery.—This was used as the only anesthetic in twenty-five cases, with good results in seventeen, partial success in two, and six failures. Bilger finds the method of great value in the aged and in patients with infection, and recommends it in arteriosclerosis, pulmonary and cardiac complications, and hypertension of renal origin. It is particularly indicated in all operations on the urethra and in intravesical interventions, except lithotrity, and might be used in treatment of hypospadias and epispadias. Epidural anesthesia is less dangerous than intraspinal, the puncture is almost painless, and the effect continues about two hours.

Revue Médicale de la Suisse Romande, Geneva

45: 193-256 (March 25) 1925

*Treatment of Fractures of Extremities. P. Decker.—p. 193.
Insulin in Treatment of Diabetes. C. Saloz and S. Katzenelbogen. —p. 231.
Santonin Poisoning; Recovery. H. Perrier.—p. 251.
Mongolian Blue Spot. H. Perrier.—p. 252.

Treatment of Fractures of Extremities.—The tongs used by Roux seem to Decker to combine all the features for ideal continuous extension. They grip the bone like ice tongs; the stronger the traction, the firmer the grip. One puncture in each side of the bone suffices, made without assistance, under local anesthesia. In Roux' seventy-two cases the tongs slipped only a few times, and without injury. There is practically no danger of infection, as the tongs grip only the outermost layer of the bone. They can be applied anywhere, the injured limb put in any position. Early mobilization of the joints is possible, and the procedure is better borne than other methods of extension. In one instance the tongs were left for six weeks on the condyles of the femur. They also allow treatment of Y-shaped fractures, combining lateral pressure on the epiphysis fragments with longitudinal traction on the shaft.

Schweizerische medizinische Wochenschrift, Basel

55: 269-288 (March 26) 1925

*Serologic Tests for Syphilis. R. Gonin.—p. 269. Conc'n.
*One Year of Goiter Prevention. F. Zeller.—p. 274.
"Scaphoid Scapula and Floating Tenth Rib." H. Frey.—p. 279.
*Arneth's Count in Pulmonary Tuberculosis. T. and J. Stephani.—p. 281.

Complement Fixation and Flocculation Tests in Syphilis.—Gonin reviews various modifications of the complement fixation and flocculation tests in syphilis. He recommends simultaneous Wassermann and Vernes reactions. Yet the clinical findings alone are decisive.

One Year of Goiter Prevention.—Zeller reports good results from prevention and treatment of goiter with iodized salt. The best results were obtained in new-born children of mothers who had taken the salt during their pregnancy.

Arneth's Count in Pulmonary Tuberculosis.—T. and J. Stephani found that Arneth's count does not indicate the prognosis of pulmonary tuberculosis, although it shows, if repeated, the change of the actual condition.

Policlinico, Rome

32: 443-477 (March 30) 1925

*Action of Autolytic Products on Growth of Pneumococci in Lungs. M. Prati and A. Cavazzuti.—p. 443.
Fibroleiomyoma of Small Intestine. G. Fanelli.—p. 448.
Exacerbation of Malaria in Istria. M. Gioseffi.—p. 451.

Action of Autolytic Products on Growth of Pneumococci in Lungs.—Prati and Cavazzuti conclude from their experiments in rabbits that the simple presence of pneumococci in the lungs does not entail pneumonia. Addition of autolytic products from lung or other tissues causes a fatal inflammation. This factor may play a rôle in traumatic pneumonia.

32: 161-208 (April 1) 1925. Medical Section

*Bronchial Asthma. C. Frugoni and G. Ancona.—p. 161.
*Relations Between Thyroid and Suprarenals. P. G. Dal Collo.—p. 191.

Bronchial Asthma.—Frugoni and Ancona made an extensive study of cutireactions in asthma. An antiasthma powder was one of the substances which elicited the attacks.

Relations Between Thyroid and Suprarenals.—Dal Collo found histologic indications of retention of thyroid secretion in dogs after extirpation of suprarenals. The epinephrin seemed to be augmented in dogs treated with thyroid preparations, and diminished after thyroidectomy.

Tumori, Rome

11: 265-384 (Feb. 20) 1925

Serologic Tests for Cancer. F. Piccaluga.—p. 265.
Cancer Destroying Properties. F. Piccaluga.—p. 291.
*The Botelho Precipitation Test in Cancer. G. C. Peracchia.—p. 318.
A Choristoma of the Testis. G. Spremolla.—p. 328.
Diffuse Telangiectatic Sarcomatosis: Two Cases. M. Giuffrè.—p. 336.
Endothelioma of Upper Jaw. G. Bilancioni.—p. 350.

The Botelho Test for Cancer.—Peracchia found the test positive in 84 per cent. of 172 serums from cancer patients, but only in 7 per cent. of 103 patients without malignant disease. He prefers Botelho's simplified second method. The serum is treated with ammonia and nitric acid, after which addition of an iodin-iodid solution causes precipitation. This disappears in normal serum on adding a little more of the solution, but with cancer serum it increases and lasts.

Archiv für Gynäkologie, Berlin

123: 337-806 (March 14) 1925

*Eclampsia and the Brain Pressure Theory. J. Wieloch.—p. 337.
*Ovarian Secretion in Parabiosis of Rats. N. Goto.—p. 387.
The Physics and Anatomy of the Abdominal Wall. H. Küstner.—p. 420.
Priority in Certain Vaginal Operations. A. Dührssen.—p. 452.
Essential Puerperal Suppression of Urine. Kirstein and Schwieder. —p. 503.
Duration of Pregnancy. A. Heyn.—p. 534.
Obstetric Examination Through the Rectum. W. Krönig.—p. 542.
Donors for Intravenous Blood Transfusion. P. Schumacher.—p. 569.
Cysts Involving Both Ovary and Tube. W. Nidereche.—p. 579.
Hydrogen Ion Concentration in Vaginal Secretion. H. Gänsle.—p. 602.
Changes in Colloidal Structure of the Plasma in Puerperal Sepsis. A. Tóth.—p. 623.
Bile Acids in Blood and Urine During Pregnancy. Kleesattel.—p. 638.
*Treatment of Placenta Praevia. W. Ballhorn.—p. 646.
Incipient Involvement of Glands in Cancer of Uterine Cervix. W. Lauschke.—p. 660.
Hemosiderin in Endometrium. W. Pösch.—p. 671.
True and False Hermaphroditism and Gonad Tumors. R. Meyer. —p. 675.
Ovarian Dermoid Cysts Containing Limbs.—R. Meyer.—p. 714.
Grave Erosion of Vagina by Zinc Chlorid. H. Naujoks.—p. 765.
Action of Pyridin Salts on Uterus. R. Joachimovits.—p. 769.
Function of Smooth Musculature and Origin of Pain.—Siegert.—p. 774.

Eclampsia and Intracranial Pressure.—Wieloch says that the dropsy of pregnancy is a distinct morbid entity, due to an extrarenal cause, probably functional injury of the capillary endothelium, and that it is always the basis for eclampsia. The same is true of pregnancy nephritis, and when this accompanies eclampsia it increases the gravity of the prognosis. In 218 cases of hydrops gravidarum, 20 per cent. developed eclampsia and 61 per cent. the preeclampsia syndrome. All the data sustain Zangemeister's theory of abnormal intracranial pressure as responsible for the eclampsia, showing the agreement of clinical and anatomic facts, and the favorable results of treatment based on this theory. Any lowering of the pressure in the cerebral arteries entails immediate aggravation of the brain pressure symptoms. Consequently, besides measures to reduce the pressure on the brain, he advises maintenance of a constant high blood pressure, to assure a sufficient blood supply in the brain. Lowering the intracranial pressure by lumbar puncture is useful only in the preeclamptic stage; but here it should be done early and often. The relatively favorable results after trephining, used only as a last resort in extreme cases, seem to afford indications for earlier application of this procedure.

Ovarian Secretion in Parabiosis of Rats.—The parabiosis of castrated and normal or hemicastrated rats shows, Goto says, the production of a "castrohormone" in the blood of the castrated rats, which directly or indirectly stimulates the

ovaries, causing hypertrophy or histologic changes, or at least ovarian hyperfunction. The change in the ovary is followed by hypertrophy of the uterus, particularly its mucosa, with hypersecretion.

Treatment of Placenta Praevia.—Ballhorn strongly advises transperitoneal cervical cesarean section in the interests of both mother and child. With this he reduced to zero the maternal and infant mortality in his total placenta praevia cases admitted without previous internal examination or treatment. General attainment of this result, however, requires sending every case of placenta praevia to the nearest maternity, without internal examination and without tamponing. In his 145 cases, treated by other methods, 40 per cent. of the women had been examined before admission; the morbidity was 17.9 per cent., and the mortality 8.3 per cent. The infant mortality was 43.3 per cent., and in placenta praevia totalis, 57.1 per cent.

Deutsche medizinische Wochenschrift, Berlin

51: 507-546 (March 27) 1925

*Climacteric Bleeding. M. Henkel.—p. 507.
Dermographism. Goldscheider and H. Hahn.—p. 508. Conc'n.
*Estimation of Pepsin. I. Boas.—p. 511.
*Results of Idem. Hirsch-Mamroth and Rindfleisch.—p. 512.
*Prevention of Tuberculosis with Killed Bacilli. H. Langer.—p. 513.
*Bone Marrow and Leukocytosis. V. Schilling.—p. 516. Conc'n.
The Steinach Operation. Schinz and Slotopolsky.—p. 518. Cont'd.
*Esophageal Voice after Laryngectomy. H. Gutzmann.—p. 520.
Insulin and the Skin. R. Ahlenstiel.—p. 522.
*Hemolysis of Streptococci. W. Rother.—p. 522.
Rare Tumors of Breast. Sonntag.—p. 523.
*Splenectomy with Omentopexy. E. Gioja.—p. 524.
*Treatment of Facial Eczema. A. Philippson.—p. 525.
Yohimbin Poisoning. J. Lehrmann.—p. 526.
Smallpox and Foes of Vaccination in Switzerland. Prinzing.—p. 526.
Secret and Proprietary Remedies. Zernik.—p. 527.
Insurance of German Physicians. S. Alexander.—p. 527.
Treatment of Gonorrhea with Silver Preparations. von Pezold.—p. 541.

Climacteric Bleeding.—Henkel wants to have every uterine bleeding in the climacterium and especially in the menopause regarded as cancer, as long as the opposite is not proved. In spite of this, he is opposed to routine extirpation of the uterus: only 12 per cent. of his 312 cases of this class had cancer of the body of the uterus. An exploratory curettement should be made in every case except when the diagnosis of cancer is evident.

Estimation of Pepsin.—Boas estimates the amount of pepsin in the stomach contents by measuring the volume of starch freed from spaghetti by the digestion. He believes that the ferments of the stomach are a more constant indicator of its condition than the hydrochloric acid.

Results of Estimation of Pepsin.—Hirsch-Mamroth and Rindfleisch used Boas' method, summarized above, in fifty-nine patients. It shows exactly even small changes of peptic digestion. The figures were low in hypacidity and high in hyperacidity. Blood inhibits the action of pepsin. Therefore, a positive test for blood in the contents makes the pepsin determination useless.

Prevention of Tuberculosis with Killed Bacilli.—Langer reports further success in inducing a positive skin tuberculin reaction in children inoculated with killed tubercle bacilli.

Bone Marrow and Leukocytosis.—Schilling discusses the functioning of the bone marrow in response to chemotactic stimuli. The leukocytosis and leukopenia in the circulation depend only partly on it. The granulocytes, lymphocytes and monocytes are interrelated in a complicated way.

Esophageal Voice After Laryngectomy.—Gutzmann is well satisfied with the results in patients after extirpation of the larynx. The training takes from four weeks to four months, but then the patients are able to speak aloud, and some of them even to sing.

Hemolysis of Streptococci.—Rother finds that hemolytic streptococci digest hemoglobin. The light area around the colonies is due in part to a wandering of hemoglobin ions from the acid produced by the colony.

Splenectomy with Omentopexy.—Gioja recommends in the third stage of Banti's splenomegaly with ascites and cirrhosis of the liver, Tansini's operation, namely, splenectomy combined with Talma's operation. The death rate is high, but the results in the surviving are good.

Treatment of Facial Eczema.—Philippson recommends in eczema of the face washing with a solution of 1 gm. of lactic acid and 0.1 gm. of salicylic acid in 100 c.c. of water.

Klinische Wochenschrift, Berlin

4: 577-624 (March 26) 1925

*Heart and Vessels in Pregnancy. W. Frey.—p. 577.
*Heart Action and Osmotic Pressure. Skramlik and Ishihama.—p. 581.
*Diabetes Refractory to Insulin. F. Umber and M. Rosenberg.—p. 583.
*Intermediary Salt Metabolism. R. Meyer-Bisch.—p. 588.
*Glycogen Reaction of Blood Corpuscles. R. Stahl.—p. 589.
Prognosis of Pulmonary Tuberculosis. E. Hager.—p. 592.
*Peripheral Circulation and Muscle Work. K. Hasebroek.—p. 595.
Cerebrospinal Fluid and Blood Sugar. E. Vogt.—p. 597.
*Simple Oxidative Processes. C. Neuberg.—p. 598.
*Vital Staining. H. Petow et al.—p. 598.
*Tumor of Midbrain. J. Ratner.—p. 599.
Kielland Forceps. R. Zimmermann.—p. 600.
Reactive Form of Glucose. F. Laquer.—p. 604. Conc'n.
Blood Sugar Determination. B. Kisch.—p. 621.

Heart and Vessels in Pregnancy.—Frey regards the increase in the volume of the blood in pregnancy as the most important cause of strain on the heart. A weak heart does not respond with sufficiently stronger contractions to the increased filling. This entails dilatation and its consequences. Tachycardia was observed in 40 per cent. of the normal pregnant women.

Heart Action and Osmotic Pressure.—Skramlik reports on the experiments made by Ishihama on the influence of hypertonic solutions on the isolated heart of the frog. The heart contractions stopped in all concentrations above eight atmospheres, but the action returned (sinus and automatic centers earlier than the conduction) after perfusion with physiologic solution if the osmotic pressure had been below forty atmospheres, and the duration of the perfusion less than forty minutes. Glucose was tolerated better than sodium chlorid when added to Ringer's fluid.

Diabetes Refractory to Insulin.—Umber and Rosenberg found all of their thirteen patients with harmless glycosuria to be refractory to insulin. Another group of ten refractory patients had high blood sugar or considerable glycosuria, but their disturbances were comparatively benign. The glycosuria is relatively independent of the glycemia in these cases. They do not regard them as true pancreatic diabetes.

Intermediary Salt Metabolism.—Meyer-Bisch has encountered four cases of isolated retention of sodium chlorid as described recently by Jungmann. The patients became edematous after ingestion of salt. The concentration of serum proteins was low. Achlorhydria and sometimes insufficiency of the external pancreas secretion were noted.

Glycogen Reaction of Blood Corpuscles.—Stahl found with Horstmann and Hilsnitz large brown clumps in blood platelets in slides exposed to the fumes of iodin. The same formations occur in megakaryocytes, but not in normoblasts. This speaks in favor of Wright's and against Schilling's theory of origin of the blood platelets.

Peripheral Circulation and Muscle Work.—Hasebroek explains the low blood pressure in trained athletes by his theory of active aspiration of blood by the peripheral vessels, which provides a good supply of blood for the working parts. The heart does not need to do more work in such persons. He believes that essential hypertension is also due to an action of the peripheral arteries and capillaries because of the great amplitude of the pulse, which cannot be explained by a mere spasm of the precapillaries. He attributes the effects of training to the exercise of the sympathetic system against the inhibitory pressor action of the autonomous system.

Simple Oxidative Processes.—Neuberg had found with Nord that the fermentatative oxidation of ethyl alcohol to acetic acid occurs over the stage of acetic aldehyd. He now reports the discovery that the second stage is not a simple oxidation of acetic aldehyd but its dismutation into acetic acid and ethyl alcohol. Germs causing acetic fermentation produce under exclusion of air equal amounts of acetic acid and ethyl alcohol from pure acetic aldehyd.

Vital Staining. — Petow, Wittkower and Pietrkowski injected mice and guinea-pigs for fourteen days with various indicators, and examined the surviving tissue. Their p_H was between 7.0 and 4.3. The medulla of the kidneys was always more acid than the cortex. Function has evidently a great influence on the reaction.

Tumor of Midbrain.—Ratner reports a case of endothelioma compressing the hypothalamus and paraventricular region. No macroscopic changes were found in the tuber cinereum, the pituitary or other endocrine glands with the exception of atrophy of the thyroid. Clinically all the signs of pluriglandular—and especially suprarenal—insufficiency had been present.

Medizinische Klinik, Berlin

21: 459-492 (March 27) 1925

*Enjoyment of Life and the Nerves of Life. F. Glaser.—p. 459.
*Stammering. F. Gumpertz.—p. 462.
*Early Operation for Gallstones. F. de Quervain.—p. 464.
*Prevention of Electric Injuries in Roentgen Work. F. M. Groedel and H. Lossen.—p. 465.
Insulin Treatment of Diabetes. O. Fischer.—p. 466.
*Gas Gangrene after Subcutaneous Injections. H. Heuss.—p. 470.
Supracondylar Fracture of the Humerus. G. Hauck.—p. 470.
*Etiology of Measles and Similar Diseases. Menzer.—p. 472. Conc'n.
Glandular Tuberculosis of Lungs. Hantschel.—p. 474.
Survey on Ferments and Morphology. S. Gräff.—p. 480.
Tuberculosis of Bones and Joints. F. de Quervain. Supplement. —pp. 1-55.

Enjoyment of Life and the Nerves of Life.—Glaser reviews the investigations which point to the region of the third ventricle as the seat of feelings and moods. The cortex produces ideas which stimulate these centers. Various stimulants—coffee, tobacco, alcohol, as well as good food and the harmful narcotics—act on these centers and increase the enjoyment of life. Satisfaction of instincts is also a pleasure—for instance, appeasing the thirst center situated in the diencephalon. Treatment by suggestion influences the vegetative system.

Stammering.—Gumpertz reviews the various theories on stammering. The ataxia of speech is not the whole of the disease. The consciousness of it makes the stutterer. It draws his attention to the otherwise unconscious articulation, he lingers on it and makes it worse. He listens only to himself, not to the other person, and cannot later correctly reproduce the contents of the conversation. Psychotherapy is indicated. It seems that the speech exercises act only by suggestion.

Early Operation for Gallstones.—De Quervain is more conservative than other surgeons. It is easier to advise an operation for hernia in young persons, since the mortality is almost negligible. It is different with the several per cents. of mortality in gallstone operations. It cannot be required as a routine procedure since it is always a compromise between the present and the future. The gallstones may keep quiet even after grave attacks. The lower the mortality will become, the easier the decision for surgery. The early operation in an attack cannot be compared with appendectomy. The danger with internal treatment of appendicitis is 6 per cent.; with appendectomy on the first day, less than 1 per cent. With gallstones the chances are about equal with either treatment.

Prevention of Electric Injuries in Roentgen Work.—Groedel and Lossen point out that the modern transformers with the tube connected directly with the high power current are dangerous. Automatic devices for interruption of the current should be required by law.

Gas Gangrene After Subcutaneous Injections. — Heuss observed gas gangrene after injections of caffein and digitoxin in an athletic man with purulent peritonitis. Gas bacilli were found in the solutions. It is remarkable that six other patients who had been given injections of the same fluid, but were in a better general condition, remained healthy.

Etiology of Measles and Similar Diseases.—Menzer does not believe in a specificity of agents of exanthematic diseases and whooping cough. The constitution, external influences and changes in the balance between the ubiquitous germs of the respiratory tract and the subject should be better investigated.

Münchener medizinische Wochenschrift, Munich

72: 503-544 (March 27) 1925

*Hypertension and Hypotension. J. T. Peters.—p. 503.
*Diseases Imposed by Suggestion on Children. Kretschmer.—p. 505.
*Tendency to Edema in Diabetes. O. Klein.—p. 506.
*Gliomas after Gunshot Wounds of Brain. K. Neubürger.—p. 508.
Sedimentation Test in Tuberculosis. W. Düll.—p. 510.
Congenital Sacral Tumor. Sonntag.—p. 516.
Traumatic Cyst of Head of Femur. E. Steden.—p. 517.
*Origin and Action of Electric Currents in Mouth. Tholuck.—p. 518.
*Gastroduodenal Tube. L. v. Friedrich and T. Bársony.—p. 519.
Surgery of Perforated Gastric Ulcers. J. Racic.—p. 520.
Amputation and Its Orthopedic Adjustment. H. v. Renesse.—p. 521.
"Plethysmography." O. Bruns.—p. 521.
"Ponndorf's Tuberculin Vaccination." H. Koopmann.—p. 522.
Russian Microbiologic Collection. H. Zeiss.—p. 523.
Diabetes Insipidus. F. Umber.—p. 525.
Gymnastics in Tuberculosis Welfare Centers. Worringen.—p. 527.
Critical Condition of Bavarian Medical Organization. H. Kerschensteiner.—p. 528.

Hypertension and Hypotension. — Peters summarizes his investigations on the blood pressure in 1,500 subjects. In healthy persons above 20 years of age the normal systolic blood pressure (auscultatory) varies between 90 plus half the age, and 130 plus half the age. Under the age of 20, the pressure varies between 60 plus twice the age, and 100 plus twice the age. The diastolic pressure (determined by the disappearance of the sound) ranges from the figure representing half the systolic pressure to a figure 30 mm. of mercury higher than this half.

Diseases Imposed by Suggestion on Children.—Kretschmer has frequently encountered instances of an erroneous diagnosis of heart disease in children. The unfortunate victim loses all joy of life, and his physical development suffers from the restrictions imposed. A similar condition arises with the assumed apex disease, which in reality does not occur in small children. A whooping cough may be prolonged indefinitely, if the mother jumps every time to hold the head of the child. The vomiting in the morning does not happen on holidays. Headaches and "heart cramps" occur frequently with children who observe them in their parents. Education of parents and treatment by suggestion is the only therapy necessary.

Tendency to Edema in Diabetes.—Klein's research showed dry retention of sodium chlorid in diabetics. If sodium chlorid is given simultaneously with glucose, the urine may not contain any chlorid at all. Urea also seems to crowd out sodium chlorid in grave diabetes.

Gliomas After Gunshot Wounds of Brain.—Neubürger reports on two cases of glioma of the brain in men who had been wounded during the war. Both died six years after the injury.

Origin and Action of Electric Currents in Mouth.—Tholuck's patient complained of a sudden darting pain near a molar tooth. The pain recurred after meals. It was due to an electric current between a silver amalgam filling of the tooth and the gold clamp of a set of false teeth. As soon as acid fermentation set in, the current became strong. He discusses the practical consequences. Zinc added to gold is especially harmful.

Gastroduodenal Tube.—Friedrich and Bársony made further investigations with the simultaneous aspiration of gastric and duodenal contents. They determined the acidity, diastase and trypsin action.

Wiener klinische Wochenschrift, Vienna

38: 347-372 (March 26) 1925

*Ulcer-Cancer of the Stomach. O. Stoerk.—p. 347.
*Resorption of Saponins. L. Kofler et al.—p. 352.
*Biology of Cancer. F. Silberstein et al.—p. 356.
*Symptomatology of the Ruptured Uterus. E. Graff.—p. 357.
Fatal Mercury Poisoning. F. Redlich.—p. 359.
Sanocrysin Treatment in Denmark. H. Poindecker.—p. 360. Cont'd.
*Treatment of Gonorrhea of Eye. H. Lauber.—p. 362.
*Sleep. C. v. Economo. Supplement.—pp. 1-14.

Ulcer-Cancer of the Stomach.—Stoerk has frequently observed the transformation of a hard gastric ulcer into a

cancer. Many of the cancer foci originated at several different points of the ulcer at the same time.

Resorption of Saponins.—Kofler, Kollert and Grill conclude from their experiments that saponins are not resorbed sufficiently when given by the mouth.

Biology of Cancer.—Silberstein, Freud and Révész found in the precancer stage of tarred mice a higher respiratory quotient (0.88) than in the controls (0.76). It is independent of the food. Similar changes were observed in tarred dogs. Intravenous injections of sugar produced only hyperglycemia of short duration. The subcutaneous injection in these dogs had the opposite effect. Extracts from cancer lowered the blood sugar in rabbits, but further increase in dosage produced no greater effect. A combination of this extract with insulin prevented the insulin poisoning. Tarred mice and animals just inoculated with cancer were much more susceptible to insulin poisoning. When the tumor became palpable, the insulin reaction was normal, and later—with a large tumor—the animal tolerated up to thirty times the otherwise lethal dose. Injections of insulin retarded the growth of inoculated tumors but the cancer grew well as soon as the injections were discontinued. When they injected the animals with increasing doses to the limits of tolerance, many animals died, but the tumor did not take in 50 per cent. of the surviving. They combine now the injection of insulin with substances which prevent its toxic effect (dioxyacetone, lactic acid and alcohol).

Symptomatology of the Ruptured Uterus.—Graff's case demonstrates the importance of a sudden disappearance of labor pains for the diagnosis of rupture of the uterus—even if the head remains impacted.

Treatment of Gonorrhea of Eye.—Lauber begins the treatment of the gonorrheal eye affection with cold applications and intramuscular injection of milk (8-10 c.c. in adults; 1 c.c. in infants). It is of the greatest importance to avoid wiping the eye: A piece of cotton dipped in a 1:5,000 solution of potassium permanganate or another antiseptic (1 per cent. colloidal silver, 3 per cent. boracic acid) should be squeezed out above the eye. This lavage should be repeated often—every ten or fifteen minutes with profuse secretion, and even during the night. A 4 per cent. colloidal silver ointment should be used with corneal ulcers.

Sleep.—Economo reviews the physiology and pathology of sleep. The recent pathologic investigations and especially Pawlow's discoveries of inhibiting conditional reflexes show that sleep is due to an active innervating inhibition from a regulating center situated between the diencephalon and the midbrain. It is essentially different from a narcosis or syncope.

Zeitschrift für klinische Medizin, Berlin

101: 249-474 (March 14) 1925

Pituitary Cachexia. W. Graubner.—p. 249.
*Plethysmography during Work. W. Ewig.—p. 278.
*Action of Pituitary Extracts. H. Zondek and H. Bernhardt.—p. 312.
*Intravenous Injection of Quinin in Malaria. Wirssaladse.—p. 320.
*Distribution of Dye. E. Bernheim and M. Hitotsumatsu.—p. 331.
Diagnosis of Heart Thrombi. T. Scholz.—p. 343.
*The Erythrocytes in Typhus. M. A. Dychno.—p. 369.
Chronic Myelogenous Leukemia. Steinbrinck and Stukowski.—p. 375.
The Skin Phenomena in Idem. Kuznitzky.—p. 386.
*Therapeutic Spirochetal Infection. W. Sagel.—p. 390.
*Hardness of Muscles. H. Marnitz.—p. 399.
*Interfereometry of Blood Serum. L. Beltz and E. Kaufmann.—p. 409.
*Interfereometric Estimation of Volume of Blood Cells. E. Kaufmann.—p. 429.
*Idem of Blood Volume. L. Beltz and E. Kaufmann.—p. 441.
The Capillary Pulse. W. Parrisius and T. Boeckheler.—p. 456.
Action of Autogenous Vaccines on Blood Picture. E. M. Fuss.—p. 467.

Plethysmography During Work.—Ewig investigated the changes in the volume of one extremity during the work of the other in healthy subjects and in patients. He attributes the different types of curves chiefly to simultaneous movements of the arm used for the plethysmography. The method is of no value.

Action of Pituitary Extracts.—Zondek and Bernhardt injected a mixture of an extract from the posterior lobe of the pituitary gland with 0.1 gm. of potassium chlorid or with 0.15 gm. of calcium chlorid. The former enhanced, the latter diminished the antidiuretic action of the extract in diabetes insipidus patients and in dogs. An almost simultaneous injection was without influence. The action of the salt diminished in successive tests, and became sometimes even reversed.

Intravenous Injection of Quinin in Malaria.—Wirssaladse injects intravenously 0.5-1 gm. of quinin hydrochlorid in 40-50 c.c. of 0.85 per cent. sodium chlorid solution. The results—especially in comatose states—are better than with any other method. It is not necessary in mild forms.

Histohemorenal Distribution of Dye.—Bernheim and Hitotsumatsu found the excretion of phenolsulphonephthalein a more complex phenomenon than it seems. The excretion and the accumulation of the dye in the renal tubuli are two separate processes. Only the former is inhibited after mercurial diuretics. Extrarenal factors are evident from the fact that 75 per cent. of the injected dye disappears immediately from the blood stream. The kidney is only one factor in its elimination, although an important one.

The Erythrocytes in Typhus.—Dychno found an increased osmotic resistance of the erythrocytes during the hemolytic stage, up to the twelfth day, and a lowered resistance in the last days of the disease. The latter phenomenon is prognostically favorable.

Therapeutic Spirochetal Infection.—Sagel examined the blood in progressive paralysis patients treated by inoculation with *Spirochaeta duttoni*. The percentage of neutrophils with rod-shaped nuclei increased from the first day, and reached 50 per cent. Reinjection of spirochetes during the late lymphocytosis stage improved his therapeutic results.

Hardness of Muscles.—Marnitz finds that the hardness of a relaxed muscle is not an indicator of its functional value nor of the value of gymnastics.

Interfereometry of Blood Serum.—Beltz and Kaufmann publish the theoretic foundations for the use of an interfereometer for estimation of protein concentration of small amounts of blood serum. The method is more sensitive than refractometry.

Interfereometric Estimation of Volume of Blood Cells.—Kaufmann describes a method for estimating the volume of the blood corpuscles. It is based on the fact that refraction of mixtures of serum and isotonic salt solution is an additive function. The error is not over 1-2 per cent.

Idem of Blood Volume.—Beltz and Kaufmann use the interfereometer and injection of resin solution for estimation of the blood volume in animals.

Zentralblatt für Chirurgie, Leipzig

52: 625-672 (March 21) 1925

Continent Artificial Anus by Kurtzahn-Haecker Technic.—Kleinschmidt.—p. 626.
*Symposium on Periarterial Sympathectomy. E. Birt et al.—p. 631.
Vicious Circle after Gastro-Enterostomy. K. Hofmann.—p. 638.
Deutschländer's Metatarsal Affection. F. Momburg.—p. 641.

Periarterial Sympathectomy.—Birt warns against sympathectomy in certain sclerotic conditions, and describes a case of presenile gangrene in the toe in a man, aged 48, with transient improvement after decortication of the artery, followed by extension necessitating amputation six months later. Rubaschow reports fair success in one case and failure in one case in fracture of the leg with delayed callus formation. Wagner says that in a case of epilepsy in a woman, aged 65, unsuccessfully treated for twenty-five years, periarterial sympathectomy on the carotid and extirpation of the superior cervical ganglion resulted in a noticeable reduction of the seizures and mental improvement, continuing for three months. In a younger woman, with less grave epilepsy, no change followed the procedure. In both cases the cells of the sympathetic ganglion showed marked pigmentation.

Zentralblatt für Gynäkologie, Leipzig

49: 625-672 (March 21) 1925

Carbohydrate Metabolism in Placenta. K. v. Oettingen.—p. 625.
*Obstetric Examination by the Rectum. A. Reist.—p. 629.
*Arthritis from Ovarian Insufficiency. Fliegel and Strauss.—p. 633.
*Centrifuge Sedimentation Test. K. Herold.—p. 634.

Manual Removal of Scraps of Placenta. H. Katz.—p. 637.
Volvulus of Uterus Intra Partum. F. Stork.—p. 641.
Anatomic Basis for Rupture of Fetal Membranes. L. Belosor.—p. 644.
Treatment of Chronic Gonorrhea in the Female. H. Sachs.—p. 648.

Obstetric Examination Through the Rectum.—On account of the insufficient opportunities for instruction of students in the obstetric wards, Reist has adapted the obstetric teaching phantom for preliminary practice in rectal examination sub partu. His illustrations show the arrangement of rubber bags representing the ampulla of the rectum, etc., and a series of hollow rubber balls, the diameter equal to that of the pelvis, with various-sized openings representing the different stages of dilatation of the os. A water-filled rubber bag as the amniotic sac, with a rubber sponge for the placental model, and the model of the fetus complete the equipment. He says it allows a surprisingly real representation of the manifold conditions during labor and successful rectal examination of the same.

Arthritis Deformans of Endocrine Origin.—Fliegel and Strauss have long made observations similar to Menge's ovariprival arthropathy in women at or near the menopause, likewise in younger women and, far less often, also in men, particularly in the middle forties. Unlike Menge, they regard this affection of the joints as arthritis deformans. They ascribe it to endocrine disturbances, especially of the generative glands and the thyroid; the favorable results of their treatment of true arthritis deformans with iodin preparations supports this view.

Acceleration of Sedimentation of Erythrocytes.—Comparison of the findings in 200 cases after centrifuging for five minutes (Henkel) and the values obtained at the same time by Linzenmeier's method established their agreement, the former foretelling the latter. The Henkel centrifuge procedure has the advantage of indicating the results definitely in a very short time.

Casopis lékaru ceskych, Prague

64: 482-520 (March 28) 1925

Janovsky's Era in Czech Dermatology. Editorial.—p. 482.
*Athletic Sports and the Heart. Libenský and Filip.—p. 485.
Fibro-Adenoma of the Breast and Its Change Into Cancer. V. Brezovnik.—p. 490.

Athletic Sports and the Heart in Later Life.—Libenský and Filip examined twenty-one men from 39 to 70 years of age, who had been devoted to some sport (gymnastics, running, wrestling, rowing, etc.) for at least twenty years. Four of them had circulatory disturbances, mostly nephrosclerosis. It was remarkable that they did not complain of difficulty in breathing. The systolic blood pressure was low in the majority of the men—averaging 122 mm.; the ratio between the systolic and the diastolic pressure averaged 1.35. The heart was rather smaller than normal, and the aorta was usually dilated. The heart was functionally efficient. Nevertheless, they consider the hypotonia as serious, and warn against carbonated baths and chloroform anesthesia.

Russkaja Klinika (Moscow)

1: 279-445, 1924. Partial Index

Diseases of Urinary Tract During the Famine Period. R. Fronstein.—p. 279.
*Osteomyelitis in Infancy. V. Moltschanoff.—p. 330.
*Lefthandedness. A. Kapustin.—p. 341.

Osteomyelitis in Early Infancy.—Moltschanoff observed in eight years twelve cases of osteomyelitis in infants less than a year old. The morbid process, principally of streptococcus or pneumococcus origin, was always located in the epiphyses, extending frequently to the joint, and causing an exudative arthritis. Two died; nine recovered completely, and in one infant a grave lesion developed a year later in the hip joint. Many dislocations of the hip joint, considered as congenital, are probably secondary to an untreated osteomyelitis in infancy. The records showed 5 per cent. fatalities under expectant treatment, and 16 per cent. with surgical intervention.

Educational Problem of Lefthandedness.—Kapustin found twenty lefthanded boys and twenty girls among 6,192 children examined. In a third of the cases the lefthandedness was hereditary. He maintains that it is not of pathologic nature, but merely indicates a predominant functioning of the right cerebral hemisphere. He argues against forcing the lefthanded to change to the right hand, and advocates special training to perfect the use of the left hand.

3: 3-146 (Jan.) 1925. Partial Index

*White Dermographism in Scarlet Fever. V. Moltschanoff.—p. 3.
Blood Pressure in Scarlet Fever. Rapoport.—p. 28.
Classification of Scarlet Fever Syndromes. P. Galtzoff.—p. 42.
Cholangitis Lenta. F. Astrakhanoff.—p. 55.
Surgical Treatment of Hemolytic Jaundice. P. Herzen.—p. 63.
Arteriomesenteric Occlusion of the Duodenum. B. Neuman.—p. 87.

Significance and Pathogenesis of White Dermographism.—Moltschanoff noted the appearance of white tracings on the skin (anemia or negative dermographism) in 210 out of 215 children with scarlet fever. Its early and lively appearance was a favorable sign; in grave scarlet fever this skin reaction did not occur. The hyperemic reaction of the skin, or red dermographism was manifest in 0.9 per cent. of the cases; more frequent was a mixed reaction (one red line and two white). He thinks he is the first to call attention to an exudative dermographism, urticaria factitia, existing simultaneously with the white, which he noted in nine scarlet fever patients. Absence or slow appearance of the white tracings proved to be an unfavorable sign, hence its value in prognosis. The white skin reaction seems to depend on the degree of inflammatory hyperemia of the surface vessels. He found it in 98 per cent. of the scarlet fever cases; in 80 per cent. of cases of sunburn; in 13 per cent. in diphtheria; in measles in 40 per cent., and in healthy children in from 2 to 10 per cent.

Nederlandsch Tijdschrift v. Geneeskunde, Amsterdam

1: 1193-1288 (March 14) 1925

*Meningitis Form of Acute Poliomyelitis. Bastiaanse.—p. 1194.
*Acute Encephalitis from Vaccination? Idem.—p. 1199.
Painless Delivery. F. C. van Hasselt.—p. 1207.
Reversible Gel Formation in Living Cell. M. A. van Herwerden.—p. 1217.
Modification of Transparency of Protoplasm Under Influence of Radium. Idem.—p. 1217.
*Carbon Monoxid Poisoning in Ford Sedan. C. C. van der Heide.—p. 1223.
Microscopy of the Capillaries. G. J. van den Bovenkamp.—p. 1225.
Gastric Ulcer-Cancer. F. A. Schalij.—p. 1228.
Case of Tumor of Auditory Nerve. G. C. Bolten.—p. 1231.

Meningitis Form of Acute Poliomyelitis.—Bastiaanse's case, in a girl of 6, terminated favorably under three lumbar punctures.

Encephalitis After Vaccination.—Seven days after the boy had been successfully vaccinated against smallpox, he developed headache, staggering gait, and slight fever, and he became unconscious, but without paralysis. The pupils were contracted, the Kernig sign positive, also the Babinski. The consciousness did not return for a week, and there was pain in one leg for several weeks. Five similar cases of encephalitic manifestations were observed elsewhere in the Netherlands the same month. The vaccine was from the same firm in all. Bastiaanse remarks that the prevalence of epidemic encephalitis in recent years warns that the neutropic properties of the vaccine should be titrated before it is marketed, but Terburgh states that the efforts of the authorities to detect neurotropic properties in vaccines have been fruitless to date.

Carbon Monoxid Poisoning in Ford Sedan.—For a few days van der Heide had from two to five attacks of brief loss of balance, with headache and sweating, before he connected them with his new Ford sedan, 1925 model. He had no further trouble after he lengthened the outlet pipe and arranged for inlet of air around the pedals.

1: 1289-1396 (March 21) 1925. Partial Index

Roentgen Findings with Iodized Oil in Lung. Keijser.—p. 1296.
*Mutilating Rhinopharyngitis. C. A. H. Waar.—p. 1301.
Changes in Antigen Structure of Bacteria. Van Loghem.—p. 1314.

Mutilating Rhinopharyngitis.—Waar describes a case of gangosa, the tertiary phase of yaws, in a Borneo woman. The process was promptly arrested by neo-arsphenamin, and the large hole left by the destruction of the nose has cleared up several disputed points in the physiology of the region, as he describes with illustrations and charts.